

# PIECE RATE STUDY



## Exploring the Economic Impact of the Piece Rate System in British Columbia

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Prepared for the British Columbia Ministry of Labour

## **PIECE RATE STUDY: Exploring the Economic Impact of the Piece Rate System in B.C.**

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This study has been prepared for the British Columbia Ministry of Labour.

## EXECUTIVE SUMMARY

The purpose of this study was to provide further economic analysis on the 15 agricultural crops that are harvested in British Columbia under the piece rate system. The main focus of our analysis was input from growers and harvest workers, as they will be most affected by recent and proposed changes to the system. The methodology included interviews with growers and harvest workers, as well as industry representatives and agricultural specialists in each specific crop sector. Thirty-one growers were interviewed in person or over the phone, 38 harvest workers were interviewed and/or filled out detailed surveys, another 178 harvest workers completed an online survey, and over 17 industry specialists and sector experts were contacted. Data was collected over a four-month period between September and December, 2018.

Presented in this paper are the results of the analysis.

### Results:

- The costs to growers of the piece-rate increase are estimated at approximately \$7.7 million annually, based on 2017 production. Good data does not exist for calculating aggregate labour-cost increases from the increase in piece rates. Based on crop production, estimated percentage of hand-harvested crops, and the increase to the piece rate, it is calculated that the January 2019 increase in piece rates of 11.5% will cost the affected sectors \$7.7 million annually. (This figure excludes any increase due to a rise in the minimum hourly wage or increase to other costs of production.)
- Increased labour expenses will decrease profitability of growers' operations. The most affected profit margin will be the berry sectors, as they have been experiencing declining production and margin levels over the past two years already.
- Growers use piece rates to incentivize harvest workers. The incentive's effect is twofold: the increase in productivity facilitates timely crop harvesting, and word of the incentive attracts harvest workers to the Thompson-Okanagan area.
- Of 178 harvest workers in the Thompson-Okanagan Region, 94% reported they prefer the piece rate, 53% said they would make less money if they were paid the minimum hourly wage, and 87% said they would stop being a harvest worker if they were only paid the minimum hourly wage.
- Several harvest workers were making, effectively, less than minimum wage. The highest-paid sectors were grapes and cherries. The lowest-paid sector was blueberries, where harvest workers were making less than minimum wage in all cases.
- Harvest worker demographics and hiring methods vary significantly between the Okanagan Valley area and the Fraser Valley/Lower Mainland area.
- Harvest worker earnings are tied to several factors, the top two being picking productivity and crop yields. The productivity of harvest workers varies widely.

- All growers reported a shortage of labour with many reporting that finding reliable productive labour is their number one challenge and has hindered their ability to expand.
- In many cases, growers were paying above minimum regulated piece rates.
- 90% of growers interviewed support the government continuing to set the minimum piece rate.
- Growers plan to increase mechanization, hire more temporary foreign workers through the Seasonal Agricultural Worker Program, and employ fewer local workers if labour costs continue to increase or if minimum wage is used as a floor.
- From growers' perspectives, the largest economic benefits to agriculture will come from continued technological advances in mechanized harvesting, as well as the development of hardier crop varieties that will maintain quality when picked mechanically rather than by hand.
- A favourable exchange rate for several crops, such as blueberries and cherries, has helped growers, who are often price-takers, absorb recent increased labour costs.

### **Limitations of the study:**

Many previous studies have shown that some harvest workers are earning below minimum wage when being paid on a piece-rate basis. As with earlier studies, lack of information was a key limitation. In this study, as well, lack of information is the major limitation in analyzing the industry and making conclusions. Several sectors, such as the mushroom sector, are very competitive, with only a few large players. For confidentiality reasons, these players are reluctant to disclose meaningful data. Additionally, working hours are often unrecorded, since payment is purely piece-based. In several cases, the data requested was either not available, not in a useful form, or was not disclosed. Due to gaps in the data and a low sample size for each of the sectors, the results from this study do not constitute a significant provincial representation of any crop.

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## 1.0 Introduction

There are 15 agricultural crops in British Columbia that have minimum piece rates set under Section 18 of the B.C. Employment Standards Regulation, including fruits, vegetables, mushrooms, and daffodils. Harvest workers of these crops are paid on a piece-rate basis and are not required to be paid the general minimum hourly wage in the Province of B.C. This agricultural payment system was established in 1981 and the piece rates have gradually increased since then to the current rates, with the last increase occurring January 1, 2019 of 11.5%. Except for the province of Quebec, no other employment standards legislation sets piece rates for hand harvesting that are neither related to nor less than the hourly minimum wage.

While piece rates have increased over time, the increases have been at a slower rate than the general minimum wage increases (Table 1). Piece Rates have increased between 54% and 93% (with an average of 77%) from 1992 to 2019, depending on the crop, whereas minimum hourly wage has increased 130% over the same timeframe. For these reasons, as well as reports that some agricultural workers are earning below the minimum wage, there is some concern in government and among advocacy groups about whether the piece rate system should remain. Notably, there are several hand-harvested agricultural products beyond the 15 covered by piece-rate legislation, such as several greenhouse grown products, that are paid using a piece rate system. However, in these cases, harvest workers are entitled to the minimum hourly wage. In addition, harvest workers employed through either the Seasonal Agricultural Worker Program (SAWP) or the Temporary Foreign Worker Program are guaranteed at least minimum-wage compensation for every hour worked (Government of Canada, 2018).

Labour is the single largest cost of production in most agricultural sectors. Increases in labour costs from a rising piece rate, therefore, could have serious negative impacts on the profitability of all agricultural sectors paying piece rates for the harvesting of their crops. Several sectors have some ability to pass increased costs on to the consumer. Most growers, however, have stated they are price-takers; any increases to their costs of production would directly decrease their margins. In some cases, these margins are already slim and have been falling. Several factors are impacting the growers' ability to be able to afford higher production costs because other input costs are also increasing such as fertilizer, chemicals, insurance, interest rates, etc. For these reasons, among others, the industry is very concerned about government actions that would put upward pressure on labour costs.

Many studies have been conducted on the piece rate system in B.C. The issue of vulnerable immigrant farmer workers has been raised in many reports (Fairey, 2012; Thompson 1994, 2018; Zbeetnoff & McTavish, 2011). A recent study (2018) prepared by the Fair Wages Commission (FWC) reported a general concern among producers and harvest workers over the lack of information about how complex the piece rate system is. The FWC study recommended a 15% increase of the minimum piece rate for

all crops and a required general minimum wage for agricultural harvesters who are paid on a piece-rate basis. In response, the B.C. Ministry of Labour decided to further study the piece rate system on these crops in British Columbia and its economic impact in the province. This study aims to analyze the economic impacts of the increase in piece rates set for January 1, 2019, and changes to the payment system by using the minimum wage as a floor for piece-rate harvesting.

## **1.1 Purpose and Objectives**

The purpose of this study is to provide an understanding of the economic impact of changes in the piece rate system by consulting growers of the 15 agricultural crops covered by piece-rate legislation, and the harvest workers hand-picking those crops.

The objectives set by the Ministry of Labour are:

- To investigate if the agriculture workers paid on a piece-rate basis are earning at least the general minimum wage, given their productivity and work times.
- To identify why they are not earning general minimum wage.
- To identify why producers pay piece rate instead of hourly.
- To identify why producers pay hourly wage instead of piece rates.
- To identify the economic impacts of increasing minimum piece rates for each industry.
- To identify the impacts of using general minimum wage as a floor and using piece rate as incentive.
- To find relevant differences between other comparable jurisdictions and British Columbia in their agricultural payment system.
- To identify potential positive or negative impacts of proposed changes to the piece rate system.
- To determine whether the previous objectives' findings alter the FWC recommendations to change the piece rate system.
- To determine whether there is a continuing role for the government in regulating the minimum piece rate.
- To identify how minimum piece rate and general minimum wage work together.
- To determine what changes should be made to piece rates to better align them with the general minimum wage.

## **1.2 Research Methodology**

Because the main focus of this study was to gather input from growers and harvest workers, we began our research by reaching out to industry groups. We contacted all the agricultural producer associations and industry groups and advised them of this study and its objective of determining the economic impact of the piece-rate increase. We invited them to provide their insights and encouraged them to forward us growers' contact information for interview purposes. The associations provided us with contacts for growers and important stakeholders experienced in the piece rate system that we

could interview. We also randomly contacted additional growers. Harvest workers were also contacted either in person, over the phone, or online for an interview or to complete a survey.

Three main mechanisms of data collection were used.

- **Grower Questionnaire. (Appendix C)**  
We designed two questionnaires, one for crop growers and one for harvest workers. The questionnaires were extensive, covering all objectives set by the B.C. Ministry of Labour. These questionnaires provided guiding questions during the interview process and were designed to collect both objective and subjective information from interviewees. The grower interviews were done on site or, when timing or geography was a constraint, by phone. The average in-person interview length was 1.5 hours; the average phone interview, one hour.
- **Harvest Worker Questionnaire. (Appendix B)**  
A similarly comprehensive questionnaire was developed for harvest workers. These questionnaires were given in paper form for harvest workers to fill out, in addition to on-site interviews conducted in English and Spanish. In some cases, two or three harvest workers were interviewed as a group. Some phone interviews were also done with a few harvest workers. The average duration of these interviews was 1 hour.
- **Online Picker Survey for Harvest Workers. (Appendix A)**  
Because the harvest workers were either working or moving around, we decided later to design a shorter, online version of the survey to allow an increase in data collection. This short survey was available in both French and English, taking approximately 5 minutes to complete. The questions for the online survey were focused on productivity, payments rates, and preference of payment. The online survey was active for over a month and was distributed via social media for mass outreach.

We travelled to the Thompson-Okanagan region on three separate occasions to interview growers and harvest workers in person. We contacted producers of every crop, trying to cover farms of many sizes and locations to include different perspectives in the analysis. The majority of stakeholders contributed both quantitative and qualitative information to the study.

For this study, the direct participants are various grower associations, as well as input from 31 growers, 17 industry representatives, and 216 harvest workers. For a comprehensive view of the payment system in B.C., harvest workers interviewed included both Canadian residents and foreign seasonal agricultural workers. All information was collected over a four-month period.

In addition to the primary data gathered from interviews and online surveys, we collected industry statistics (e.g., historical crop production and farm gate value of crop) from the British Columbia Ministry of Agriculture and Land (BCMAL) and Statistics

Canada. Additional industry information was provided from various commodity groups, such as the B.C. Blueberry Council and the B.C. Tree Fruit Growers Association. Further data is sourced from literature used in previous studies conducted for FWC and the B.C. Ministry of Labour.

## 2.0 Piece Rate System – Overview

There are currently 15 crops for which the provincial government still sets the minimum piece rate. These crops include vegetables, fruits and daffodils, and are diverse in both nature and production. The growing methods, growing areas, industries, labour force, farm size, markets, harvest methods, and overall operations can differ significantly both among commodities and within the same commodity. For example, one fruit grower's property might consist of hundreds of acres of primarily one fruit, such as cherries, while another grower's covers fewer than 10 acres and grows 8 or 10 different fruits. Variance in size, products, and management must not be overlooked. The 15 crops are listed below with their current minimum piece rate and the new piece rate, effective January 1<sup>st</sup>, 2019. The new rate represents an 11.5% increase in each case.

*Table 2.1. Piece Rates in 2017 and 2019*

Crop	September 15, 2017	January 1, 2019
Apples	\$18.89 a bin (27.1 ft <sup>3</sup> / 0.767 m <sup>3</sup> )	\$21.06 a bin (27.1 ft <sup>3</sup> / 0.767 m <sup>3</sup> )
Apricots	\$21.73 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )	\$24.23 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )
Beans	\$0.259 a pound / \$0.571 a kg	\$0.289 a pound / \$0.637 a kg
Blueberries	\$0.438 a pound / \$0.966 a kg	\$0.488 a pound / \$1.077 a kg
Brussels sprouts	\$0.180 a pound / \$0.397 a kg	\$0.201 a pound / \$0.443 a kg
Cherries	\$0.248 a pound / \$0.547 a kg	\$0.277 a pound / \$0.610 a kg
Grapes	\$20.07 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )	\$22.38 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )
Mushrooms	\$0.260 a pound / \$0.573 a kg	\$0.290 a pound / \$0.639 a kg
Peaches	\$20.07 a 1/2 bin (12.6 ft <sup>3</sup> / 0.357 m <sup>3</sup> )	\$22.38 a 1/2 bin (12.6 ft <sup>3</sup> / 0.357 m <sup>3</sup> )
Pears	\$21.27 a bin (27.1 ft <sup>3</sup> / 0.767 m <sup>3</sup> )	\$23.72 a bin (27.1 ft <sup>3</sup> / 0.767 m <sup>3</sup> )
Peas	\$0.323 a pound / \$0.712 a kg	\$0.360 a pound / \$0.794 a kg
Prune plums	\$21.27 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )	\$23.72 a 1/2 bin (13.7 ft <sup>3</sup> / 0.388 m <sup>3</sup> )
Raspberries	\$0.395 a pound / 0.871 a kg	\$0.440 a pound / 0.971 a kg
Strawberries	\$0.380 a pound / \$0.838 a kg	\$0.424 a pound / \$0.934 a kg
Daffodils**	\$0.152 a bunch (10 stems)	\$0.169 a bunch (10 stems)

\*\*The rate for daffodils does not include vacation pay.

## 2.1 Definition

The piece-rate payment system is a method of remuneration according to the number of units produced or jobs completed. In the case of the agricultural crops that fall under B.C.'s regulated piece rate system, the term refers to a payment schedule relative to the harvest worker's productivity. B.C. growers may choose to pay harvest workers based

on a piece rate system, compensating harvest workers in proportion to what they pick. Workers harvesting any crop not covered by piece-rate regulation standards are entitled to the minimum hourly wage. Currently, there is no floor to the piece rate system; a harvest worker's earnings correspond strictly to the worker's productivity, and how much they harvest.

## **2.2 Background**

In 1979, provincial governments across Canada worked to choose an optimal compensation scheme for their agricultural workers. In British Columbia, the B.C. Federation of Agriculture (now B.C. Agricultural Council) opted to apply the minimum hourly wage to workers. Crops that already had a piece rate in place, however, would continue to qualify for the piece rate system. Later, the province appointed Colin Aykroyd to conduct a study into the productivity levels of 11 different crops (blueberries, raspberries, strawberries, apples, pears, cherries, apricots, peaches, prunes, grapes, and Brussels sprouts) and determine the piece rates for each crop by which, in Aykroyd's assessment, a "skilled and diligent" worker would be able to earn the minimum wage (Thompson, 2018). His 1981 study, "Application of the Minimum Wage to Farm Labour," a.k.a. the Aykroyd Report, would become the foundation of the current piece rate system.

Aykroyd does not discuss how these rates might be adjusted in the future, however. Between 1981 and 1993, piece rates rose mainly in proportion to increases in the minimum hourly wage (R.A. Malatest and Associates, 1995). By then, farmers were reporting that the variable remuneration costs had approached unfeasible levels. Since 1990, the general minimum wage has increased by 130%. Piece rates have increased by 77% (see Table 1).

Furthermore, piece rates have not been adjusted based on updated agricultural production practices. Adapted pruning techniques, new crop varieties, and mechanization alter the piece measurement needed for piece rates to correspond to the general minimum wage. Because each piece rate increase has been based on the previous rate, rather than taking industrial advances into account, current piece rates may be out-dated due to lack of adjustment for changing agricultural practices.

## **2.3 Existing Research and Previous Studies**

Several reports on B.C.'s agricultural piece rate system have been made over the last few decades. Among these reports, several describe anomalies in and abuses of the piece rate system, including inconsistent wage payments, low worker income, and inaccurate productivity records.

In 1994, Mark Thompson published a report addressing the abuses of agricultural worker compensation. This report was relayed to the Employment Insurance (EI)

program, then known as Unemployment Insurance. It outlined unlawful practices carried out by labour contractors in the province, including “failure to pay wages, incorrect records of earnings and other matters.” Thompson recommended removing piece rates from the agricultural sector, which, as he later related (2018), was not received favourably by industry.

In a follow-up study, Malatest (1995) further investigated the provincial piece rate system. He reported that most people in the agricultural industry opposed abolishing the piece rate system. He also found that piece rates were not proportionate to productivity levels and called for a time and motion study for each crop.

More recently, Darrel M. Zbeetnoff and R. Bruce McTavish (2011) reported that a lack of information in several crop sectors, especially in the mushroom industry, left them unable to calculate what harvest workers were being paid. Due to lack of data they could not effectively cross-reference what Lower Mainland growers paid labour contractors and what the workers actually received. They did find that many growers, mainly in the tree-fruit industry, were paying on average above the minimum hourly wage.

David Fairey (2012) has criticized the provincial government’s decision to freeze agricultural piece rates. He points out that their decision was based on flawed reports. Comparing B.C.’s agricultural payment systems with those of Quebec and Ontario, Fairey urges the government to eliminate the piece rate system. He recommends that growers use minimum wage as payment and piece rate strictly as incentive.

Last year, Thompson (2018) published another report addressing the effect of changes to minimum piece rates. He found that the Lower Mainland labour force, consisting mainly of Indo-Canadians, is shrinking, with growers relying increasingly on SAWP workers and mechanization. He predicts that the industry’s trend toward mechanization will continue to increase productivity.

Our research aims to gather data to determine the economic impact of an increase to the piece rate system, and the economic impact of the piece rate system overall on the economic viability and sustainability of the 15 industries affected by directly gathering input from growers and harvest workers.

### **3.0 Economic Contribution to the B.C. Economy from the 15 Crops Harvested by Piece Rate**

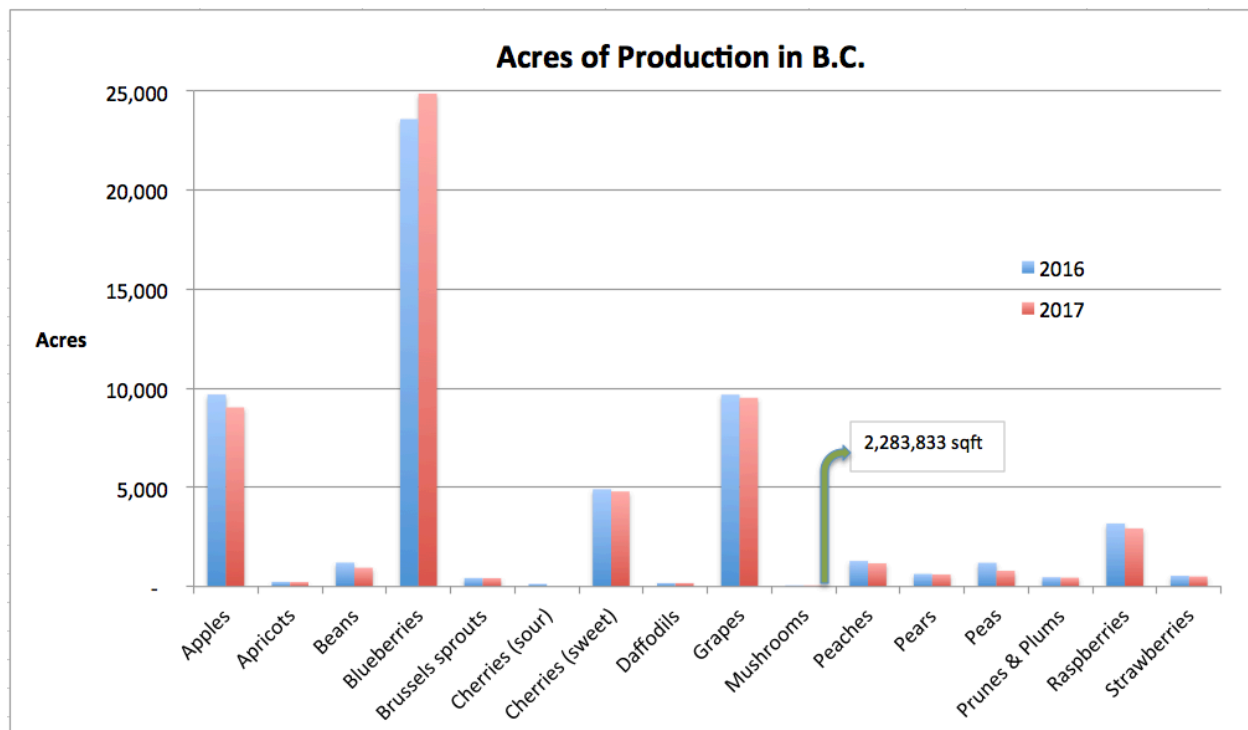
The crops concerned in this study contribute significantly to B.C.’s agricultural industry. Based on 2017 Statistics Canada data, the 14 agricultural crops (excluding daffodils) regulated by B.C.’s piece rate system total 56,384 acres planted, 286,960 tonnes in total

production, and \$568 million in net farm receipts provincially. They represent 34% of all B.C. net crop receipts and just over 17% of national farm receipts (Statistics Canada).

### 3.1 Production and Farm Gate Value

We will analyze three aspects of production in this section: acres planted, crop output (measured in metric tonnes), and total cash received by farms per sector. In other words, we will review each sector's physical size, production, and income. This data illustrates the relative importance of each sector to B.C.'s overall agricultural industry.

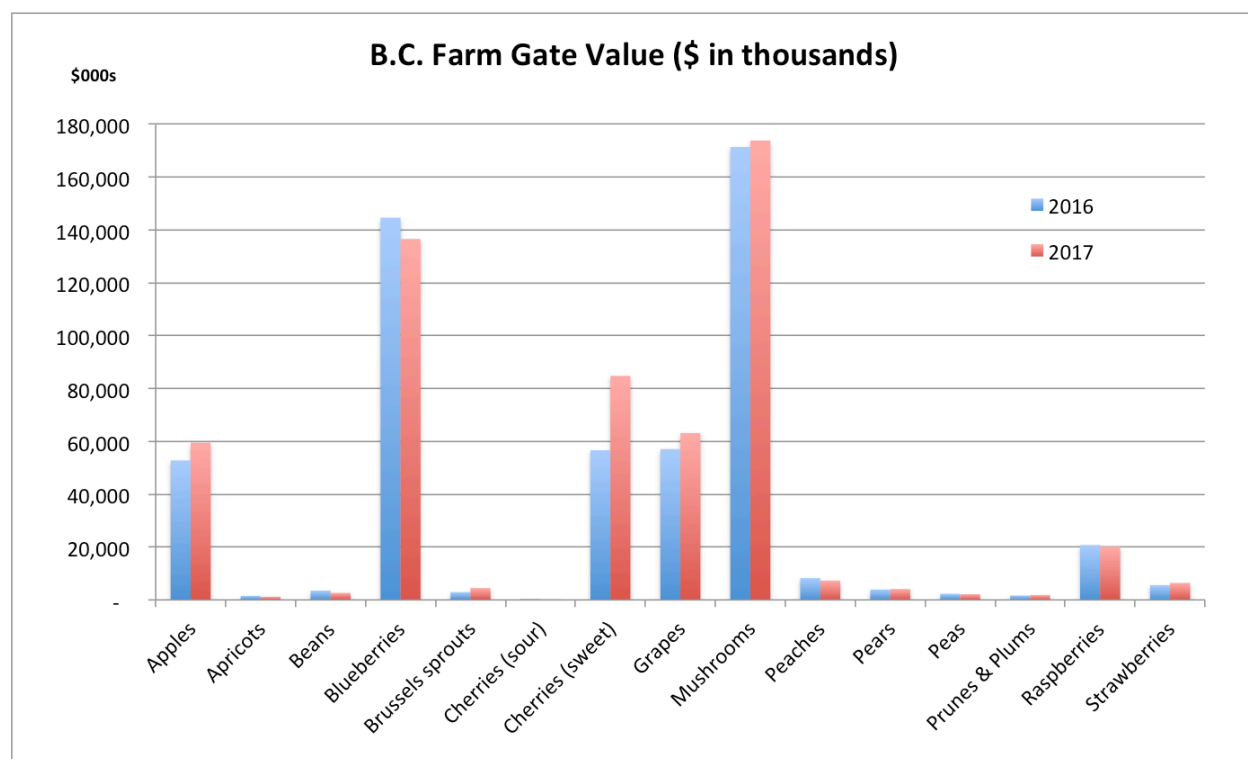
*Figure 3.1.1. Acres of Production in B.C.*



Source: Statistics Canada

The main sectors in terms of acres planted are blueberries, grapes, apples, and cherries. In 2017, blueberries represented the largest acreage in B.C. There were 24,878 acres of blueberries planted, or 13% of Canada's total blueberry acreage. The second-largest crop was grapes, which had a total of 9,526 acres planted, or 31% of Canada's grape acreage. Apples were the third largest, at 9,039 acres and 21% of Canada's apple acreage. Cherries, at 4,798 acres, represented 93% of total acres planted in Canada. Apricots, at only 230 acres, nevertheless represented 70% of Canada's total acreage. Mushrooms made up 2,283,833 square feet of production in 2016, or 38% of Canada's total planted mushrooms (Statistics Canada, 2016).

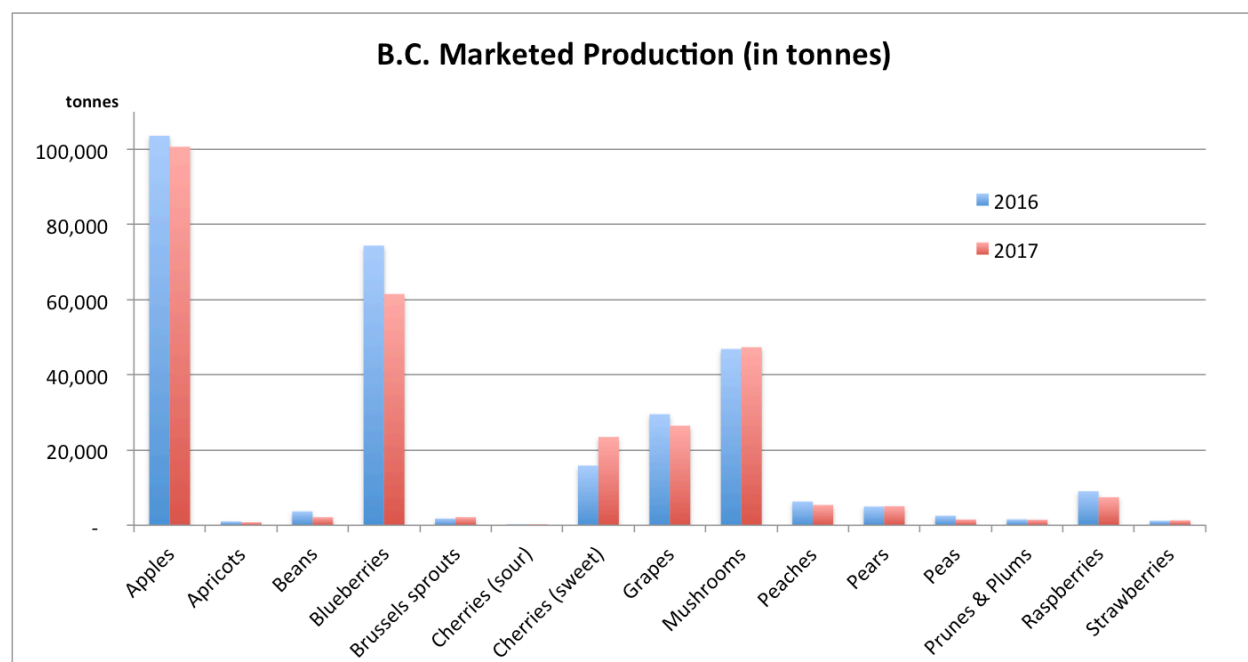
Figure 3.1.2. B.C. Farm Gate Value



Source: Statistics Canada

The value of net farm gate receipts resulting from the 14 crops totalled \$567.9 million in 2017. The largest crop in terms of net farm receipts was mushrooms, with a value of \$173.8 million, representing 33% of all mushrooms sold in Canada. The second largest was blueberries at \$135.6 million and 67% of Canada's production. Cherries represent the third-largest crop in farm gate value at \$84.7 million and 96% of Canada's cherry receipts. Grapes and apples hold similar net farm gate values at \$63.1 million and \$59.5 million, respectively. According to growers and industry specialists interviewed for this study, additional acres are planned for cherries and grapes, which is consistent with historical data showing recent year-over-year growth for these sectors.

Figure 3.1.3. B.C. Marketed Production



Source: Statistics Canada

Apples represent the largest of the 14 crops in marketed production, with 100,694 tonnes marketed in 2017. This is equivalent to 29% of Canada's total apple tonnage. The blueberry sector marketed 61,510 tonnes of berries, down 20% from 2016. B.C. blueberries represent 38% of Canada's total blueberry production. Mushrooms were third, at 47,359 tonnes, or 36% of Canada's mushroom tonnage. Like blueberries, grapes fell in 2017, totalling 26,481 tonnes. Cherries increased 47% from 2016 to 2017, producing 23,383 tonnes in 2017 and 97% of cherries marketed in Canada. Raspberries are the sixth largest crop in B.C., marketing a total of 7,463 tonnes in 2017, or 77% of Canada's raspberry production. Apricot tonnage fell significantly in 2017, from 1,022 tonnes to 794 tonnes, but represents 84% of Canada's total apricot production.

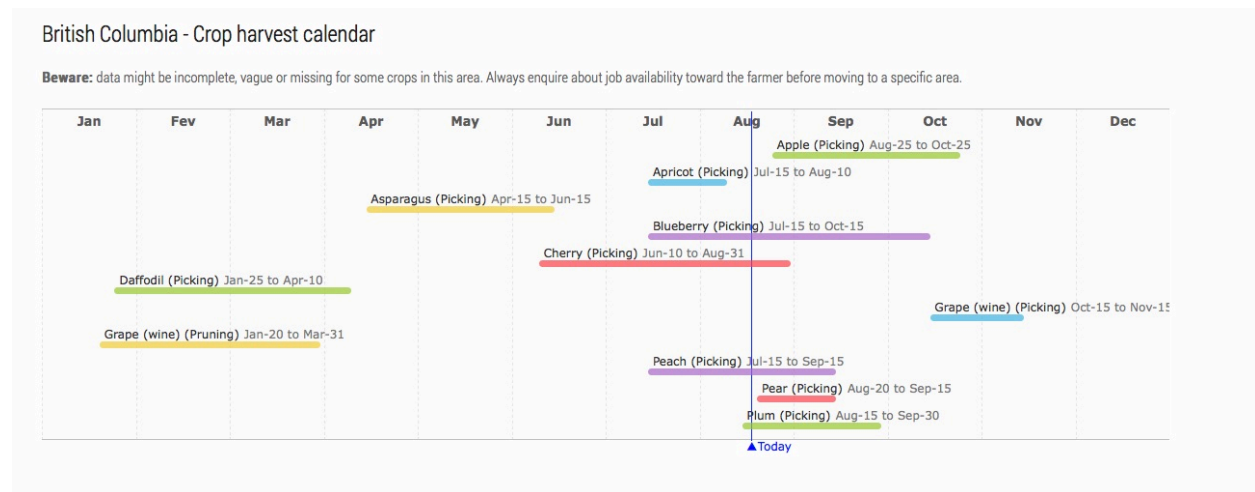
Five key crops in B.C. hold a much larger industry share than the remaining 10 crops harvested under the piece rate system: mushrooms, blueberries, cherries, grapes, and apples. These crops alone total \$517.7 million in farm gate value, or 31% of all crop receipts in B.C. Therefore, these sectors are important to B.C.'s agricultural economy and contribute significantly to the province's agriculture industry. Consequently, much of this study will focus on these crops.

### 3.2 Harvest Season

The majority of the 15 crops under the piece rate system are produced in two regions of B.C.: the Thompson-Okanagan area and the Fraser Valley / Lower Mainland. Most vegetables, berries, and mushrooms are produced in the Lower Mainland, while tree fruits and grapes are mostly produced in the Okanagan.

Harvest times vary depending on the crop. Tree fruits and grapes, predominantly produced in the Thompson-Okanagan region, are harvested between mid-June and mid-November. The berries and vegetables considered in this study are predominantly produced in the Lower Mainland and have harvesting times ranging from mid-May to mid-October. On average, each region has five months of field-picking time. Exceptions include mushrooms, produced year-round and requiring harvesters for the whole year, and peas and beans, typically harvested between early July and late September.

*Figure 3.2.1. British Columbia – Crop Harvest Calendar*



Source: [picktheworld.org](http://picktheworld.org)

### 3.3 Hand-Harvest Production Paid on Piece-Rate Basis

Picking methods vary depending on the crop. All tree fruits, mushrooms, and strawberries are handpicked, since there is no provincially available mechanized harvesting method for these crops. The harvesting of these crops is largely compensated by piece rate. One exception lies in apricot and peach harvesting, which is compensated hourly; apricots and peaches are delicate and risk bruising when picked too quickly. Grapes are machine-picked by large producers, but most small- and medium-size vineyards use hand harvesting and pay by piece rate. Most Brussels sprouts, and many beans and peas, are machine-harvested. Blueberries and raspberries are mostly machine-picked; hand-pickers are typically paid by piece rate. Based on industry consensus we were able to estimate the percentage of the crop that is hand harvested. Furthermore, we estimated the percentage of the hand-harvested crop that is paid using the piece rate.

Table 3.3.1. Percent of Production Hand-Harvested and Paid on Piece-Rate Basis

Crop	Production Hand Harvested	Hand Harvested Production Paid on Piece Rate Basis	Production Hand Harvested and Paid on Piece Rate Basis
Apples	100%	75%	75%
Apricots	100%	0%	0%
Blueberries	35%	98%	34%
Cherries	100%	95%	95%
Grapes	60%	90%	54%
Peaches	100%	0%	0%
Pears	100%	95%	95%
Plums and Prunes	100%	90%	90%
Raspberries	10%	95%	10%
Strawberries	100%	80%	80%
Beans	25%	90%	23%
Brussel Sprouts	0%	0%	0%
Green Peas	25%	90%	23%
Mushrooms	100%	98%	98%
Daffodils	100%	50%	50%

Source: Industry Consensus or Estimated with Industry Input

## 4.0 Harvest Worker Demographics, Pay Rates and Productivity

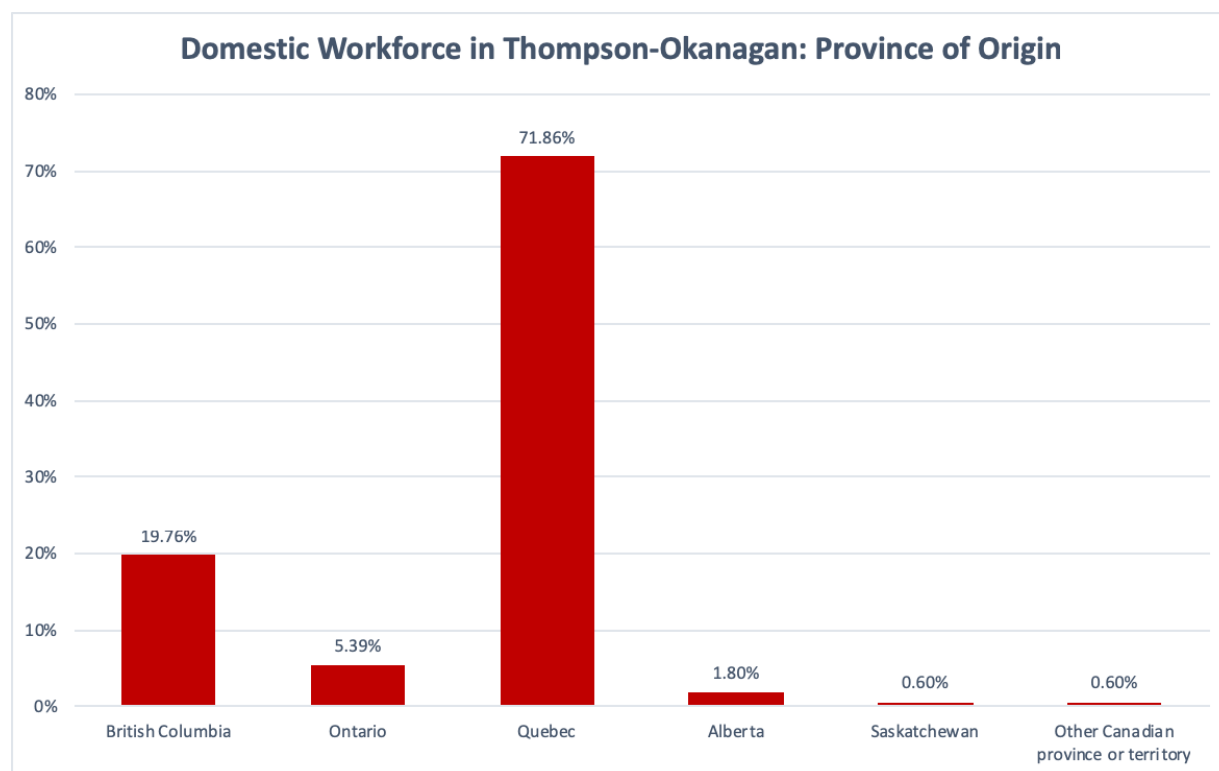
Worker backgrounds and demographics vary widely throughout the province. The main differences between the Lower Mainland and Thompson-Okanagan regions lie in the age distribution, ethnicity, and previous agricultural experience of pickers. The two regions also differ significantly in their hiring methods. Harvest workers in the Okanagan are mostly young Caucasians from Quebec. In the Lower Mainland, the agricultural labour force consists mainly of older Indo-Canadian immigrants.

Both regions are increasingly hiring temporary foreign workers through programs such as the seasonal agriculture worker program (SAWP). Most temporary foreign workers in the province are hired from Mexico through the Seasonal Agricultural Worker Program (SAWP). Many are in their thirties and forties and all have agricultural backgrounds

### 4.1 Harvest Workers in the Thompson-Okanagan

Estimates suggest 7,000 harvest workers are employed in the Okanagan Valley (Thompson, 2018). Most are students that come to work the fields every summer. In the Okanagan region, there are no labour contractors. Most jobs are advertised by word of mouth or online. The average age of the workforce is under 35 years. Many workers come from Eastern Canada, especially Quebec and Ontario, and most work multiple farms and crops. Based on our survey results, over 93% of our Okanagan sample consists of Canadian harvest workers, with most migrating seasonally. Over three-fourths of our respondents were from Eastern Canada, predominantly Quebec, with a few from Ontario. Twenty percent were from B.C.

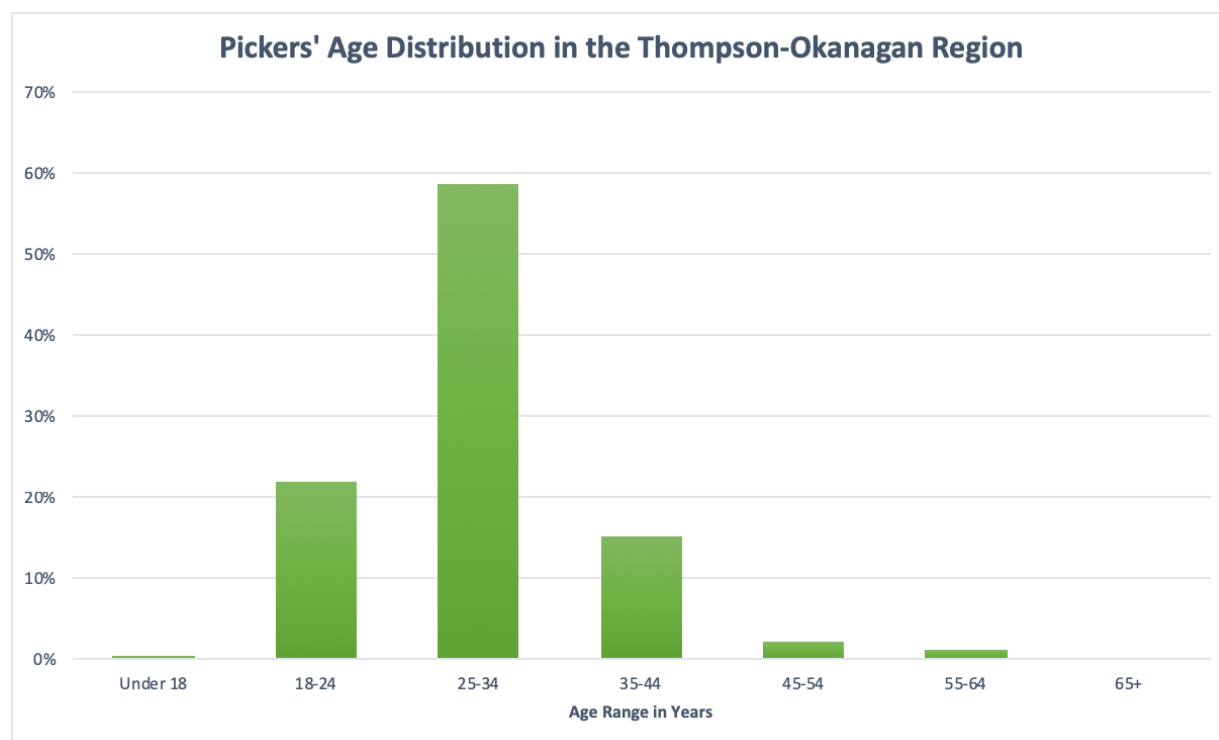
Figure 4.1.1. Province of Origin for Domestic Workforce in the Thompson-Okanagan Region



Source: Online Survey (n=178)

Most pickers from the Okanagan show a much younger age distribution. Of the 178 pickers who responded to our questionnaire over 80% claimed to be less than 35 years of age. Furthermore, the distribution of ages in the Okanagan region appears to be positively skewed, indicating that most of the sample lies on the younger side of the distribution. Our results agree with previous studies, finding roughly 60% of the harvest workforce in the Okanagan to be male.

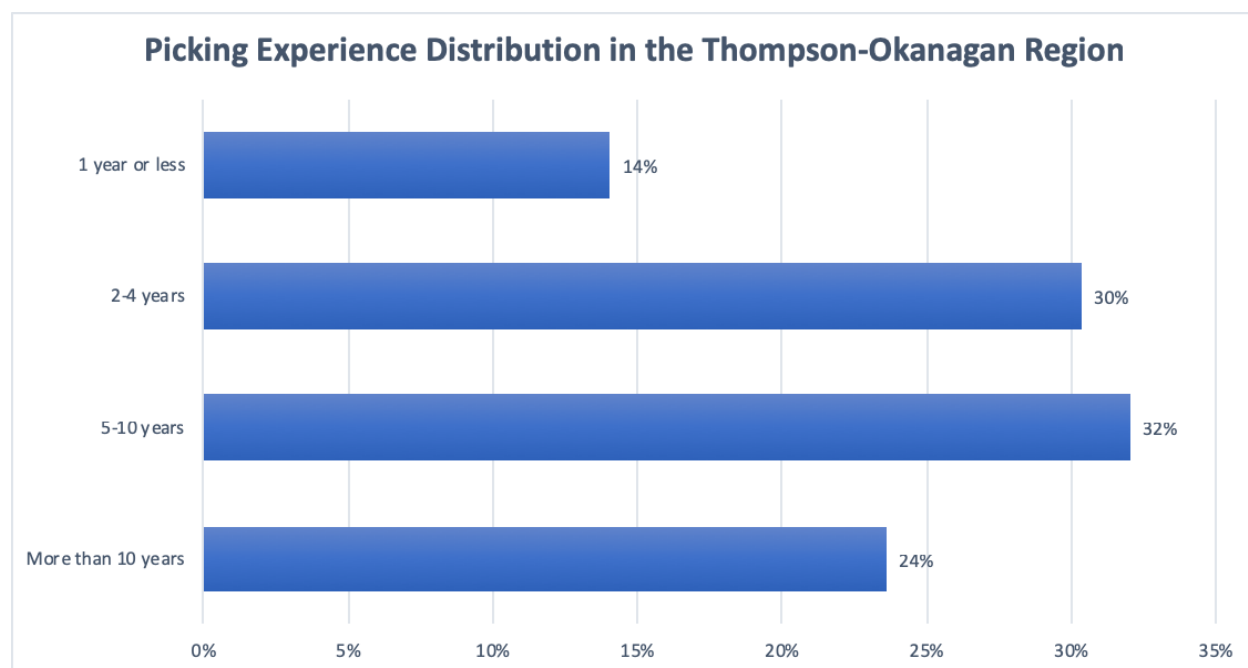
Figure 4.1.2. Age Distribution of Workforce in the Thompson-Okanagan Region



Source: Online Survey (n=178)

Our survey results found that the harvest workers in the Thompson-Okanagan region had relatively little experience with 44% of the workers having less than 4 years experience. Over 85% claimed to have two or more years' experience, with an average of 8 years' picking experience in total. There were, however, 24% that had over 10 years experience. These numbers are not statistically significant, however, due to the small sample size.

Figure 4.1.3. Picking Experience Distribution in the Thompson-Okanagan Region



Source: Online Survey (n=178)

## 4.2 Harvest Workers in the Lower Mainland / Fraser Valley

In the Lower Mainland, the agricultural labour force harvesting berries consists mainly of older Indo-Canadian immigrants. Except for the mushroom sector, most growers use labour contractors to hire local harvest workers. Most contract workers are Indo-Canadians 55 years of age or older, both male and female. Previous research has indicated similar results, including findings by Zbeetnoff and McTavish's (2011) who reported 88% of Lower Mainland workers were over 55 years of age. Some growers claimed that over 90% of their workers are older than 65, and have made the same claim to the FWC (2018). Zbeetnoff and McTavish also found that two-thirds of all Lower Mainland workers are female.

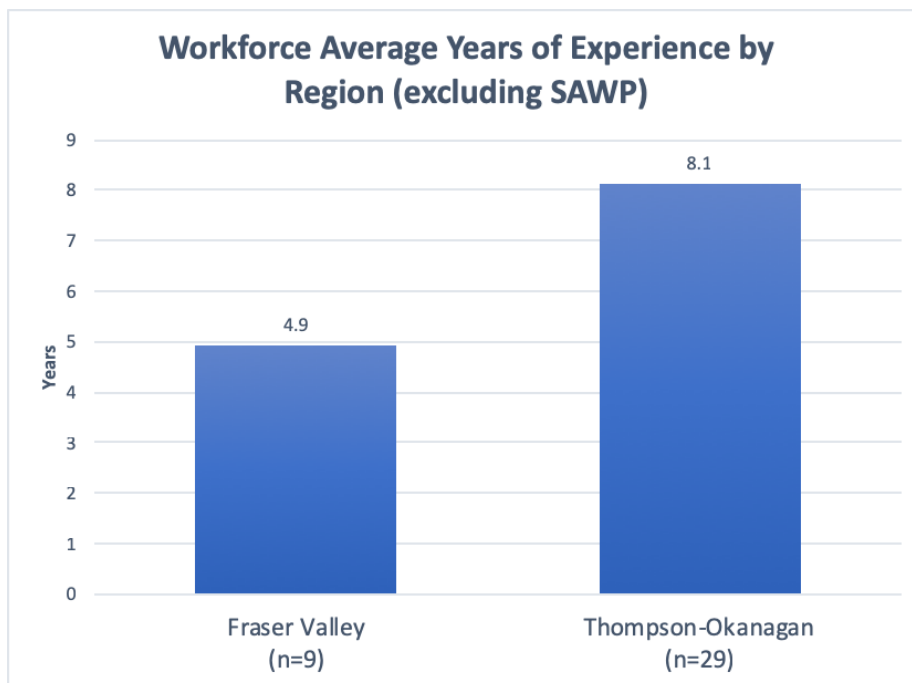
We did not receive any direct input from mushroom growers or pickers, but anecdotal information from industry participants indicates that mushroom pickers seem to be predominantly Indo-Canadian or South Asian; many are from Vietnam. According to one industry expert, the average mushroom picker is female and about 40 years old. A recent 2017 study conducted by the Canadian Agriculture Human Resource Council (CAHRC) found that around 73% of the harvest workers in the mushroom industry are Canadian residents, while the remainder is sourced from the Temporary worker programs. In B.C., the figures are not known, and anecdotal reports from an industry insider reported that there are a significant amount of unpermitted harvest workers.

Lower Mainland mushrooms pickers seem to have a distinct labour network. Each worker is responsible for a designated area of production that they work on their own

time. On the surface, this system works for labour assessed by piece rate, but problems arise in figuring out work hours, which are often not recorded. This omission of reporting hours may factor into potential safety malpractices in the industry because it is not known when the worker is on site in the barns, which can be a significant safety concern.

All Lower Mainland harvest workers who were interviewed by our research team were Indo-Canadian, and many did not speak English. As with SAWP workers, the language barrier proves challenging for workers and producers alike. The Lower Mainland workforce also appears to be less experienced at harvest labour than the Okanagan workforce. On average, pickers' experience was slightly under five years. This figure is necessarily vague: while many workers immigrated to Canada having worked in, or retired from, different professions, some may have harvested crops in their country of origin.

*Figure 4.2.1. Workforce Average Years of Experience by Region Excluding SAWP*



Source: Harvest Workers' Interviews (n=38)

### 4.3 Temporary Foreign Workers

The number of temporary foreign workers in British Columbia has increased over the past few years. According to growers, this increase is likely to continue, due in large part to a shortage of farm labour.

Most temporary foreign workers are paid on an hourly basis. The majority are males in their thirties and forties. In 2017, 88% of B.C.'s temporary foreign agricultural workers

were hired from Mexico through SAWP (Mexican Consulate, 2018). In 2018, 95% of SAWP Mexican workers in British Columbia were male (Mexican Consulate, 2018).

The main challenge when dealing with SAWP workers is the language barrier. Eligible SAWP workers must come from rural agricultural areas; most do not have access to language schools and cannot speak English. Given their agricultural experience, they are able to pick crops, and they generally comply with growers' rules. When issues arise, however, workers unable to communicate with their producers contact their national consulate. Such issues might include a 4-hour pay check delay or a picker wanting to harvest a different crop, and would be easy to resolve in the absence of a language barrier. In practice, however, this has resulted in the Mexican Consulate intervening in farm business and causing alarm among growers.

The Mexican Consulate informed us that workers also report abuses by growers. One common abuse involves compensation. SAWP worker compensation must meet the minimum hourly wage, regardless of whether payment is assessed hourly or by piece rate, but workers have reported underpayment. Another common abuse involves workloads. SAWP workers are required to work a minimum of 240 hours over a period of 6 weeks or less. Some growers do not manage this requirement well, loading workers heavily at the end of their working period to meet the required hours.

Growers who do not comply with SAWP wage or work-hour requirements face penalization. They may have their number of temporary workers reduced or, in extreme cases, be pulled out of the program.

We received information from the Mexican Consulate on the number of SAWP workers as well as the complaints filed. The complaints have drastically been reduced in the past year as the Mexican Consulate works with the growers and workers to reach conclusions. Further information provided to us was that in 2018 the payment complaints resulted from 2 growers, where 69 of their workers complained.

*Table 4.3.1 Mexican Harvest Workers from SAWP in B.C.*

	<b>2016</b>	<b>2017</b>	<b>2018</b>
Total	5457	5,887	5,822
Male	96%	95%	95%
Female	4%	5%	5%
Complaints filed (general)	n/a	3,208	1,579
Payment complaints	n/a	n/a	69

Source: Mexican Consulate

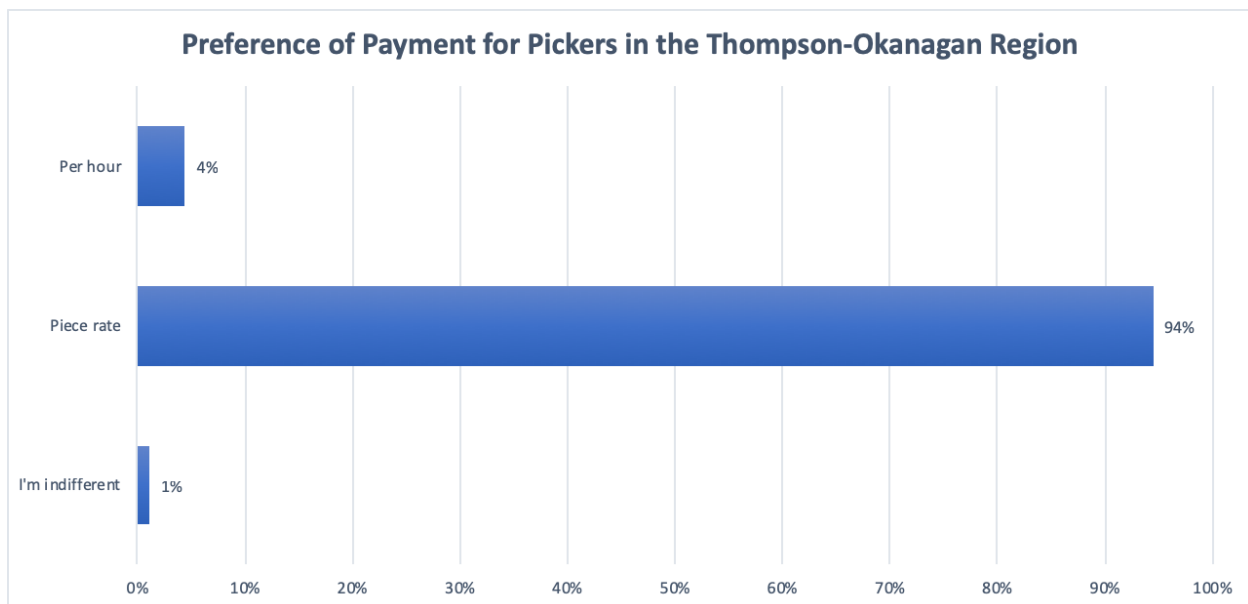
## 5.0 Survey Consultation with Harvest Workers

A total of 216 harvest workers were either interviewed or surveyed.

### 5.1 Thompson-Okanagan Harvest Workers

In their survey responses, the vast majority of Okanagan pickers (94% of 178 surveyed) indicated they would rather be paid by piece rate than by hourly wage. In personal interviews, even many inexperienced and low-productivity harvest workers preferred the piece rate system over hourly wages. The potential of eventually exceeding the minimum hourly wage and maximizing personal profits by gaining skill and experience appealed to respondents.

*Figure 5.1.1. Preference of Payment for Pickers in the Thompson-Okanagan Region*



Source: Online Survey (n=178)

Motivation, equitability, and freedom ranked high among the reasons they prefer to be paid piece rate. Many harvest workers use their productivity as a means of friendly competition. This helps them with motivation, thereby increasing their total gains. Respondents felt that piece-rate payment is a fair system, remunerating workers for exactly as much work as they have done. Under an hourly-wage system, two workers whose productivity differs over a given number of hours would be paid equally. Respondents suggested this would be seen as unfair to labourers with higher production. Lastly, most Okanagan respondents noted the freedom they feel with this job, as opposed to (what they view as) conventional jobs. They feel free to do as they please because they are paid for their productivity rather than their looks or presence. This perceived freedom, together with a lack of constant supervision, contributed significantly to these workers' preference for piece-rate pay over hourly wages.

Not all comments were positive, however. Some workers complained of extensive unpaid labour. Carrying buckets, moving ladders, transporting bins and crates, and other harvest activities go unpaid under a piece rate system while still consuming workers' time and energy. Too much job activity unrelated to picking is one of the major reasons behind workers not meeting the minimum wage.

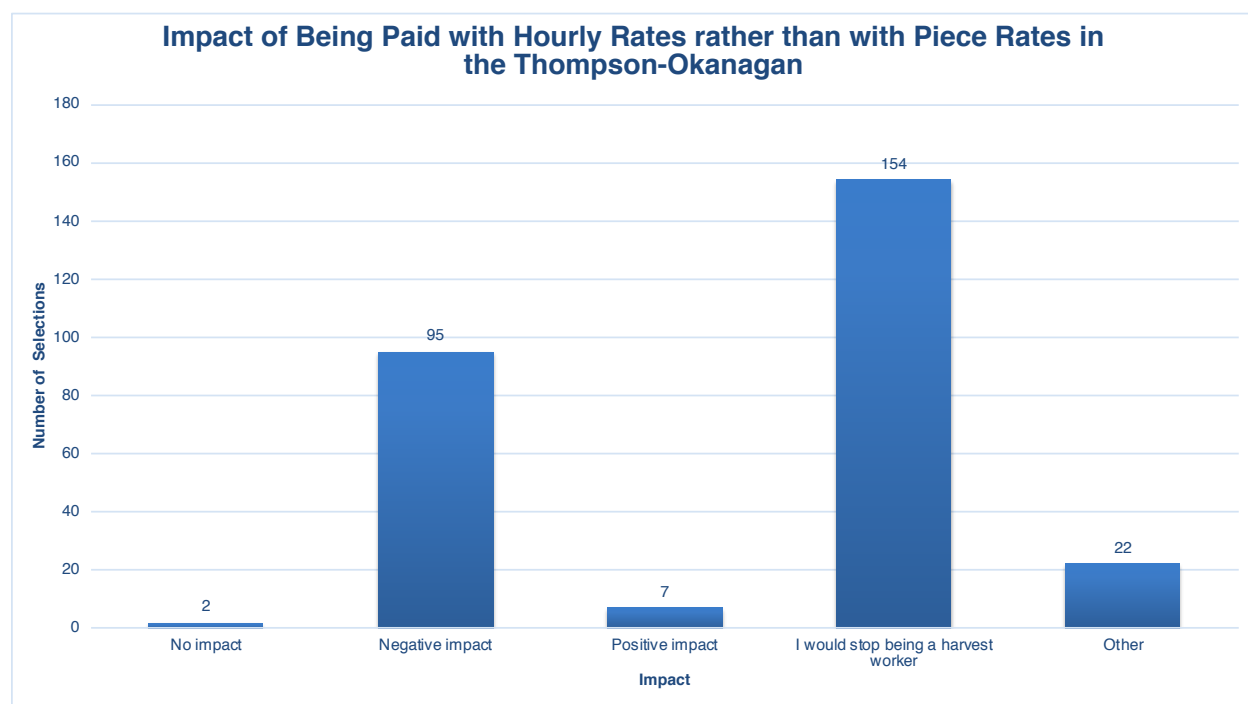
A workforce representative in the Okanagan spoke about the perceived unfairness among pickers of having less protection than temporary foreign workers. Producers are required to provide foreign seasonal workers with accommodation, living facilities, and a minimum hourly wage, even if the workers are paid by piece rate. No such policy protects Canadian harvest workers. This lack of protection, according to the workforce representative, proves hazardous for new entrants into the labour force. New pickers may wait over two weeks to earn more than \$100 per day, due to inexperience and unfamiliarity with picking techniques. (The representative noted that training in picking techniques is seldom provided, and safety training only occasionally.) Canadian pickers' living facilities, if any, can exclude running water, vital to hygienic living conditions and food safety. With greater numbers of temporary foreign workers arriving in the region, the Okanagan workforce has been calling for action on equal rights and preference of domestic employment.

Harvest workers also felt threatened by the increasing number of visiting-status Mexicans joining the agricultural labour force. Canadian harvest workers claim these undocumented pickers will accept nearly any pay rate, leading to hardship for domestic workers in their own rate negotiations with growers. Other stakeholders in the Okanagan have confirmed that increasing numbers of visiting Mexican labourers have been joining the workforce, especially over the past year.

During harvest, most pickers camp either on-farm or in designated campsites. If the sites lack food storage facilities, as is often the case with on-farm sites, keeping fresh food becomes a challenge. Many workers live in their vehicles, and those without vehicles suffer from a lack of regional transportation. Travelling to shop for food or clean clothes is difficult for them. Off-season, most harvest workers in the Okanagan assume a job in a different industry and/or go back to school.

Because the Thompson-Okanagan growers use the piece rate system to attract harvest workers, the question was proposed to pickers in the online survey of what would they do if there was no piece rate and they were paid hourly. Most said they would be negatively impacted and 87% said they would stop being a harvest worker.

Figure 5.1.2. Impact of Using Hourly Rates rather than Piece Rates



Source: Online Survey (n=178)

## 5.2 Fraser Valley / Lower Mainland Harvest Workers

The Lower Mainland harvest workers we interviewed were from the berry sectors, most of them blueberry-pickers. The following analysis excludes vegetables and mushrooms, predominant crops in the region, as there was no response from workers in those sectors.

The Lower Mainland responses differed significantly from those of the Thompson-Okanagan workers. Of the limited responses from pickers in the Lower Mainland, 100% expressed a preference for an hourly wage. One respondent reported earning less than the minimum wage when paid by the hour, but preferred hourly pay nonetheless. Given the average hourly piece-rate wage of \$5 for this agricultural region, the respondents' unanimous preference is unsurprising. (This wage, paid by labour contractors, could not be cross-referenced with growers' contractor payments, due to a lack of data from labour contractors and growers.) Like the Okanagan respondents, Lower Mainland pickers appreciate the piece rate system's lack of worker supervision, which allows them to work at their own pace, but would prefer to earn more with an hourly rate.

Another regional difference arises in frequency of pay. In the Okanagan, workers get paid at least every two weeks. In the Lower Mainland, payment frequency can vary between every two weeks and every two months. While labour contractors are legally required to pay their harvest workers every two weeks, several workers we interviewed were not using a labour contractor, instead working for a grower directly. Harvest

workers in the Lower Mainland appear to be paid less, and less frequently, than their Okanagan counterparts.

Living conditions and transportation, on the other hand, do not seem to be comparably challenging for the Lower Mainland workforce. Respondents do struggle to earn enough to pay rent, but all live in houses with their families. Transportation to the berry field was done by carpool or supplied by the contractors.

Lower Mainland workers identified inadequate work provisions and unreliable piece measurement as income obstacles. Some claimed they had to bring buckets from their own house or be charged for using farm supplies. One picker reported a lack of reliable transportation for their blueberry boxes, and that workers occasionally had to carry their boxes on their heads. Many respondents also claimed that producers altered the scale used to weigh produce, and recommended that it be checked regularly. Supply expenses, unnecessary non-picking time, and unreliable piece measurement were all factors that directly affected their income.

While farms do undergo site and safety audits, growers are advised of these audits in advance. In interviews, harvest workers reported that growers changed their practices completely on audit days. Many respondents claimed younger, trained workers were hired for the occasions, or that the grower would opt to machine-harvest on those days. They also claimed elderly workers were asked to stay home for audits. During the audits, necessary safety displays would be provided, as would water, but this did not reflect daily practice. Respondents recommended that future audits be done without notice on a surprise basis.

As in the Okanagan, many Lower Mainland workers identified foreign visitors as a problem. Indian visitors come to the Lower Mainland seasonally to work the fields. One grower noted that some picking cards appeared to be shared, given the extremely high productivity recorded. Since most growers use labour contractors, growers were not able to provide individual data for the visiting harvest workers.

Language and age barriers impede most Indo-Canadian harvest workers in securing off-season employment. Instead, if eligible, they rely heavily on EI. Many interviewees recounted difficulty meeting the insurable-hours threshold, however. They mentioned having to comply with unreasonable contractor demands and beg for hours, regardless of actual hours worked. Those who did qualify for EI claimed the amount is not enough for the whole off-season, leaving them to depend on the rest of their family to provide for the household. Others could neither find off-season work nor qualify for EI.

In our interviews, we asked harvest workers why they pick in the berry fields despite the apparent health risks of elderly people working long shifts outdoors in the summer heat. All respondents replied that picking is the only job they qualify for; many neither speak English nor have a driver's license. Some work in the fields because they come from

agrarian backgrounds and value working in the fields. Others cited family pressure to contribute to household income. Still others cited pragmatic reasons, such as qualifying for EI and, eventually, Old Age Security (Fairey, 2008). Finally, the work holds social appeal. An estimated 60% of Lower Mainland pickers are elderly women and 40% are elderly men. Picking in the berry fields is a social activity, getting workers out of the house and moving around. In their view, even if they don't earn much money, picking is preferable to earning nothing and staying home.

Interviewing harvest workers in the Lower Mainland was very difficult. With the help of a researcher in the Indo-Canadian community, we were able to interview workers in their native language. They were still very hesitant to be interviewed, however, for fear of growers, other harvest workers, or a labour contractor finding out and barring them from future work. They suggested an anonymous system for reporting worker mistreatment would be beneficial to them. Respondents seemed unaware of labour laws, but were familiar with EI and pension regulations.

### 5.3 Crop Specific Productivity and Pay Rates

Based on the data collected through online surveys, some employment records from growers and interviews, we were able to estimate average productivity of harvest workers.

*Table 5.3.1. Average Productivity, Rate of Payment and Hourly Wage in B.C. (According to Harvest Workers)*

Crop	Unit of Measurement	Pickers (n)	Average Daily Productivity	Average Rate of Payment	Average Daily Work Hours	Average Hourly Wage
Apples	Bins	114	6.22	\$24.25	8.8	\$17.15
Apricots	Half-bins	0	..	..	..	\$12.65
Beans	Pounds	0	..	..	..	n/a
Blueberries	Pounds	9	114	\$0.44	10.9	\$4.62
Brussels Sprouts	Pounds	0	..	..	..	n/a
Cherries	Pounds	507	593	\$0.25	8.8	\$18.30
Grapes	Half-bins	70	8.23	\$31.17	8.8	\$29.15
Mushrooms	Pounds	0	..	..	..	n/a
Peaches	Bins	0	..	..	..	\$12.65
Pears	Bins	19	5.15	\$27.68	8.8	\$16.20
Peas	Pounds	0	..	..	..	n/a
Prune Plums	Half-bins	6	7.71	\$23.42	8.8	\$20.54
Raspberries	Pounds	0	..	..	..	n/a
Strawberries	Pounds	0	..	..	..	n/a

Source: Online survey, harvest workers interviews, and productivity data from two cherry orchards

Note: Apricots and peaches are mostly paid on an hourly basis with minimum wage

Based on this information, we could then calculate the productivity required to earn minimum wage.

## **1. Cherries**

On average, harvest workers make over the general minimum wage. They may not have the largest acreage or marketed output, but based on our online survey in the Okanagan, it is the crop with the greatest influence on piece-rate pickers' income. Most workers in the Okanagan seem to be part of the cherry industry. Out of the 178 harvest workers that were surveyed, 92% of them seem to be active in the cherry industry, and 91% reported being paid by piece rate. On average, cherry harvest workers reported to earn above \$18 an hour.

From data provided by two large cherry producers for 507 workers, we calculated that 16% of harvest workers make under minimum wage, with 84% of them were making above minimum wage. On average, harvest worker were earning over \$18 per hour by picking cherries via piece rate. These numbers seem consistent with the data provided by cherry pickers surveyed online.

Additionally, approximately 14% of the surveyed workers are considered "inexperienced" since they have been working as a harvest worker for one year or less. Assuming that these "inexperienced" workers are minimally productive, this could help to explain why 16% are not earning at least the general minimum wage per hour. This tells us that entrants to the picking labour market would probably have difficulties obtaining the minimum hourly wage with a full day's work, until they have experience and are productive.

## **2. Grapes**

The grapes industry seems to have the highest productivity relative to the base production required to earn minimum wage (Table 5.3.1). Grape pickers on average harvest almost 50% more than the minimum rate, achieving the highest hourly rate among piece-rate crop sectors of \$29.15 per hour. With staff records of two vineyards with 21 harvest workers and 70 worker contributions from the online survey, we estimated that nearly 98% of the pickers were making over minimum wage, less than 3% of grape-pickers make below minimum wage. Most growers claimed to top up the daily earnings if the workers where not making minimum wage. When the crops were thin or the variety was not apt to make decent income, the wages were paid hourly.

## **3. Apples and Pears**

Apple productivity differs from that of other piece-rate crops, since the proportion of work paid by piece rate varies throughout the sector and harvest season. Sixty-four percent of pickers reported piece-rate compensation in the apple sector. We can summarize the payment system as follows: the first round of picking, which require the apples to be carefully selected by color, are often paid per hour, as is picking at the end of the harvest. Picking during the peak of the season is usually piece rate. Based on the

average piece rate and productivity reported by workers in our online survey, 21% of apple-pickers make below minimum wage when paid by piece rate (n=114). On average, they are earning the equivalent of \$17.17 per hour. In interviews, several harvest workers mentioned having to work harder to make the same amount of money picking apples as they would by, for example, picking grapes. While most apple-pickers appear to be making above minimum wage, many are not protected by a minimum hourly income regulation. This insecurity affects all workers in the highest-producing sector of this study.

The average piece rate in the pear sector was reported to be higher than in the apple sector, but productivity levels were on average lower. All pears are hand-harvested, with around 95% percent of harvest workers paid by piece rate. Given the productivity levels reported and the average piece rate paid, we found that 47% of pickers in this sector earn below minimum wage in an average day's work.

#### **4. Other Tree Fruit**

Respondents reported that they were compensated primarily by the hour for harvesting small fruit, like peaches and apricots, since small fruits are often delicate. Farmers use piece rate to incentivize worker productivity for time-sensitive harvests; for fruits that bruise easily, and are thus susceptible to rapid loss of quality, producers tend to use hourly wages. By sacrificing worker productivity to allow for greater attention to technique, producers help safeguard product quality.

#### **5. Blueberries**

The last crop we could gather productivity information for was blueberries, the second-most-produced crop of this study. Around 95% of blueberry production takes place in the Lower Mainland. Unsurprisingly, given the picker demographics in that region, their productivity is low relative to the base rate required for minimum wage. All nine respondents we interviewed appeared to be making under minimum wage. Our small sample size, however, limits the significance of this information.

#### **6. Vegetables and Mushrooms**

Our methods yielded no significant data on vegetable, mushroom, or daffodil productivity. Thompson (2018) reports that Brussels sprouts are picked almost entirely by machine. There is no machine available for mushroom picking, meaning all mushrooms are hand-harvested. Most mushroom-pickers are said to be paid with piece rates, but the information is vague. We could not analyse picking information, as no data was available. For this reason, further inspection and study in this sector is highly recommended.

## 5.4 Impacts on Productivity

One of the key objectives of this study is to determine what harvest workers are earning. When workers are paid the minimum agricultural piece rate, do they earn at least the general minimum wage for all hours worked across all 15 crops? They do not, according to our findings. Not all workers always earn the minimum wage for each hour they work. Reasons for this shortfall may include:

- 1) **Inexperience.** The worker may be new and not yet skilled. If a harvest worker has never picked the crop before, they may not earn rates equivalent to the minimum wage for the first few days. Some growers provide “training days,” paying workers the minimum hourly wage for a day or two until they have learned the picking technique.
- 2) **Unproductiveness.** The worker may be unproductive. If a harvest worker is not meeting a certain level of productivity, they will not earn at least minimum wage. Any number of factors might lower productivity. The worker may feel tired or unwell, or simply wish to avoid pushing himself or herself for a day. If they are picking a summer crop, they may find the heat oppressive. (To mitigate the heat, orchard growers often schedule picking early in the morning, and have begun experimenting with evening harvests.) They may be elderly or not able-bodied. Some of these factors are within the workers’ control, while others, such as weather or disability, are not.
- 3) **Low-yielding crop.** If a crop yield is low or of poor quality, the harvest worker may not be able to pick enough fruit in an hour to earn at least minimum wage. A low-yielding crop may occur for a wide variety of reasons. Some causes are outside the grower’s control, such as bad weather or poor pollination. Some may fall within the grower’s control, such as ineffective pruning or weeding practices or suboptimal fertilizer. In the event of low crop yield, some growers decide to pay the minimum hourly wage. Alternatively, if the crop yield is low due to small fruit, some growers increase the piece rate so that the harvest worker will not make less money just because the crop yield is low.
- 4) **Significant downtime.** Each harvest worker will spend some amount of time on non-picking activities, such as walking between rows, walking buckets to the pick-up point, or simply waiting. Because the worker is only earning income while picking, they do not earn anything during this downtime. Depending on the orchard or farm and its set-up, this downtime may be significant. For example, a given farm or orchard set-up may involve a great deal of walking around fields or colour-sorting. In these cases, the worker cannot devote sufficient time per hour picking fruit to earn at least minimum wage. Some growers have identified this problem in their own set-ups, and have diverted to paying the workers minimum wage during significant non-picking time.
- 5) **Combination.** Any number of the above factors may contribute to the harvest worker’s inability to earn at least the minimum hourly wage.

Information on the piece rate that the harvest workers earned was collected through the online survey, interviews, and pay information provided directly by growers. In our collection process, we found that many industries, especially in the Lower Mainland, have large data gaps. Many growers do not even know how much their workers are picking and don't know how much the labour contractor is actually paying the harvest worker.

Working times differ in both the Fraser Valley / Lower Mainland and Thompson-Okanagan agricultural regions. On average, Okanagan pickers work 8.8 hours daily. In the Lower Mainland, according to harvest workers and producers, pickers work on average over 10 hours daily. Given workforce demographics, it is no surprise that the workers in the Okanagan region (young, English-speaking, and seasonal) are harvesting more produce in less time. Most of these workers' hourly piece-rate earnings exceed the minimum wage. By contrast, Lower Mainland harvest workers (elderly, non-English-speaking, local) pick longer, harvest more slowly, and earn less hourly than the minimum wage.

When paid by piece rate, pickers may take breaks whenever they choose. The workers we surveyed take two breaks per day on average, each about 10 minutes in length. A few claimed to take no breaks at all. When harvest workers are paid hourly, however, most take three breaks: two short, paid breaks at the beginning and end of the day, and an unpaid lunch break mid-day.

## **6.0 Interview Consultation with Growers**

A key component of this research study involved collecting input from growers. The objective was to find growers that harvested their crop by hand with harvest workers that were paid piece rates. Thirty-one growers located throughout B.C. were interviewed, mainly in the Fraser Valley and Okanagan. In addition, 17 industry experts were interviewed.

Our method for reaching out to industry consisted of several stages. First, we contacted the producer associations and/or councils representing individual crop sectors within the industry. We advised them of our study and invited them to provide input. We then interviewed and spoke with several of the general managers or executive directors of the producer organizations. We asked them to refer us to growers who would be available for interview. Independently, we also searched for additional growers to interview.

Growers were contacted via e-mail and telephone. We advised all growers that participation in our study was completely voluntary, and explained that all responses would be anonymous. Most interviews were conducted in person, with the remainder being conducted over the phone.

Finding participants for this study was the most challenging and time-consuming part of the study. Collecting substantial, useful data was nearly impossible in some crops sectors: either the data did not exist at all, did not exist in a useable form, or was deemed confidential or too difficult to calculate out. We did manage to gather some data by which to report findings, however.

Based on the grower interviews, we were able to summarize the productivity that they reported, as well as the minimum daily productivity required for a harvest worker to earn the equivalent of minimum hourly wage.

*Table 6.1. Minimum Productivity Required to Achieve Minimum Wage and Productivity Levels in B.C. (According to Growers)*

Crop	Unit of Measurement	Minimum Daily Productivity Required*	Growers (n)	Minimum Daily Productivity	Average Daily Productivity	Maximum Daily Productivity
Apples	Bins	6.0	6	2-6	4-9	9-11
Apricots	Half-bins	5.2	1	..	..	..
Beans	Pounds	439.6	1	..	..	400-500
Blueberries	Pounds	259.9	10	40-150	120-300	250-500
Brussel sprouts	Pounds	632.5	1	..	..	400-500
Cherries	Pounds	459.1	8	220-240	500-600	800-1200
Grapes	Half-bins	5.7	5	4-6	6-8	10-12
Mushrooms	Pounds	437.9	2	240	..	600
Peaches	Bins	5.7	3	..	..	..
Pears	Bins	5.4	1	2-6	4-9	9-11
Peas	Pounds	352.5	1	..	..	400-500
Prune plums	Half-bins	5.4	1	..	..	..
Raspberries	Pounds	288.2	4	..	..	..
Strawberries	Pounds	299.6	5	60	240	300-350
Daffodils	10 stems	749.0	1	..	..	..

Source: Growers' Interviews

\*To achieve \$12.65/hour with nine hours of work using minimum piece rates from September 15, 2017

## 6.1 Grower Input for Tree Fruits and Grapes

Harvest workers have been migrating to the Okanagan for fruit harvest since the 1960s. In some cases, young people from Quebec consider it a rite of passage to come to the Okanagan in the summer and pick fruit. The Thompson-Okanagan harvest season begins in early June and runs through October, during which time over 23,816 acres of apples, cherries, grapes, pears, and other small fruit must be picked. The tree fruit growers require productive workers to harvest the highest-quality fruit in good time for shipping. It is important that the fruit is harvested not only effectively but also quickly, when still ripe. If the fruit is not picked in time, the quality decreases. Lower-quality fruit risks downgrading, resulting in a lower price for the grower's fruit. To maximize quality and secure the highest possible prices, the grower must ensure their crop is picked quickly. For this, they require highly productive workers.

Growers use the piece rate system to incentivize workers, increasing their productivity with the prospect of correspondingly higher earnings. Growers in the Thompson-Okanagan generally do not use labour contractors; they hire harvest workers directly.

## **1. Cherries**

Eight cherry growers were interviewed, all with farms in the Thompson-Okanagan region. The farms had a combined size of 836 acres producing 8.965 million pounds of cherries, or 17.3% of B.C.'s 2017 annual cherry production. These eight growers together employed over 1,100 harvest workers, of whom 348 were hired through SAWP.

All cherries in B.C. are hand-harvested; mechanized cherry-harvesting techniques do not seem to be present in the province. Seven of the eight growers stated that nearly all harvest was paid by piece rate. (The remaining grower employed solely SAWP workers and paid them primarily by the hour.)

Results from our interviews with cherry growers include the following data:

- Harvest workers were primarily from Eastern Canada (Quebec and Ontario). Most were backpackers or travelers, typically between 19 and 40 years old and generally in their mid-20s.
- Typically, picking begins early in the morning and is finished by early afternoon (5 am – 1 pm), representing 6 – 8 hours of picking per day.
- Harvest season for some growers was as short as 12 days, while others were harvesting for up to 2 months, dependent on the size of operation and variety of fruit.
- Only harvesting was paid by piece rate. All other duties, such as pruning and driving tractors, were paid hourly. On rare occasions, growers would switch to hourly pay for their harvest workers, generally if crop yield was low.

### **Reported Piece Rates:**

The piece rates being paid by growers varied slightly, with most paying just over the 2018 minimum piece rate of \$0.248/lb. Several growers offered a bonus (typically \$0.03/lb) to harvest workers who stayed for a full season.

- The minimum piece rate was \$0.25/lb, paid directly to the harvest worker.
- The typical bonus was \$0.03/lb.
- The maximum piece rate was \$0.35/lb, generally only for a few days where yields were low or an area needed to be cleaned up.

### **Impact of Increase to Piece Rate:**

Currently, no mechanization is available for cherry producers. Given that everything is handpicked and mostly paid by piece rates, the increase in piece rate will certainly increase producers' costs. Employment will not be severely affected, as there will still be

demand for harvest workers. Furthermore, margins in the cherry industry are robust and appear able to absorb this cost. The majority of cherry production is for export, mainly into Asian markets, which entails higher income for producers. Altogether, the cherry industry can absorb the impact of an increase in piece rate.

## **2. Apples and Pears**

Six apple growers were interviewed, all with farms in the Thompson-Okanagan region. The farms had a combined size of 315 acres producing nearly 10 million pounds, or 4.5% of B.C.'s 2017 annual apple production. Together, these six growers employed over 94 harvest workers, of whom 66 were hired through SAWP.

All apples in B.C. are hand-harvested; mechanized apple-harvesting techniques do not seem to be present in the province. Two of these same growers were also growing pears, also handpicked, with workers compensated 100% by piece rate.

Results from our interviews with apple and pear growers included the following data:

- Four out of the six growers interviewed were using only SAWP workers to harvest apples. Of these, half paid by piece rate and the other half paid by the hour.
- The two remaining growers interviewed used local labour. One paid by piece rate and the other paid either piece rate or hourly, whichever was higher. This grower reported that the record keeping was entirely based on workers reporting their own hours.
- Industry specialists shared that a significant number of SAWP workers were employed in apple harvesting. Growers confirmed they had begun to hire SAWP workers several years ago, in the absence of reliable local labour.
- Two growers interviewed referred to SAWP workers as “a godsend,” and several growers reported not knowing how they would harvest the fruit without SAWP workers.

### **Reported Piece Rates Paid by Growers:**

The piece rates being paid by growers varied depending on the variety of apple, but all amounts paid were equal to or higher than the minimum piece rate of \$19/bin. (1 bin = 800 lbs)

- The minimum piece rate paid was \$19/bin for McIntosh and Fuji varieties.
- The maximum piece rate paid was \$25/bin for Gala.
- The average piece rate was \$22/bin, as long as at least 80% of the apple crop was being harvested.
- All growers reported using hourly rates for spot picking, cleaning up a section, or ensuring high apple quality (i.e., avoiding any bruising).  
The reported piece rate for pears was \$25 – \$27 per bin, over the minimum rate of \$21.27/bin.

### **Impact of Increase to Piece Rate:**

Rising labour costs in the pear and apple sectors seem to greatly affect producers, since the margins for these fruits are not as strong as other crops'. Having Washington State, a major apple producer, as a neighbour strongly affects the local market price. Higher labour wages would negatively affect the sector's viability. Apple producers reported that, in the case of constantly rising wages, they would rely more on family labour, sell out, or change crops.

In the apple sector, new, high-yield tree varieties are being adopted in the orchards. These varieties come to fruition at a young age, yield more produce in less space, and are easier for harvesters to pick. Higher production entails higher labour costs, however, which is a drawback for some producers. One apple producer claimed to be looking into all feasible mechanization technologies, such as picking platforms, to rely less on labour for harvesting. The tendency in the apple sector will be to adopt new technology as much as possible to reduce dependency on high-cost labour.

The pear sector does not have such technologies available. Pear varieties still produce the conventional large trees that do not allow for mechanized harvest. Continuous rising costs could severely affect the future viability of the pear sector.

### **Impact of Minimum Wage as a Floor:**

In the apple sector, we saw the highest use of minimum wage as a floor and the corresponding, optional use of piece rate as an incentive. This was done primarily to ensure high-quality picking and avoid bruising, or for spot picking.

## **3. Small Tender Fruit**

Only two growers surveyed were growing small fruit, and the acreage in production was small. However modest B.C.'s small-fruit production may be compared to the rest of the crops in scope, however, the province does produce more than half of Canada's apricots and prune plums. All small fruit are handpicked, like the rest of the tree fruits. As mentioned above, most small fruit needs careful attention when being picked, so the producers prefer to use an hourly wage. Harvesting apricots and peaches is entirely paid by the hour, since producers don't want to incentivize quick and careless picking. Prune plum harvesting, on the other hand, is mostly paid by piece rate.

According to interviewees, the economic impact of rising labour costs will affect producers' margins. Since they are price takers, they will need to absorb the cost. Orchards producing small fruit often seem to have a mixed crop for diverse production; some producers claimed rising labour costs would lead them to change the structure of their orchards so as to rely as little as possible on labour. Mechanization was not an option.

The impact of using the minimum hourly wage as a floor for prune plums would most likely affect employment. As in other sectors, a requisite minimum wage would encourage hiring based on productivity, where higher-productivity pickers would be preferred over less inexperienced ones. On the other hand, some producers reported having already adopted these practices when crop yields were light and pickers were not making enough money per day. Apricots and peaches are already paying minimum wage to pick the delicate fruit, so there will be no impact by this change.

#### **4. Grapes**

Four grape growers were interviewed, all with farms in the Thompson-Okanagan region. The farms had a combined size of 426 acres producing 4.1 million pounds of grapes, or 7.0% of B.C.'s 2017 annual grape production. Together, these four growers employed over 160 harvest workers, of whom 23 were hired through SAWP.

Growers and industry experts estimated that approximately 40% of the grapes in B.C. are machine-harvested. We did interview a fifth grape grower, but they machine-harvested 55% of their crop and paid primarily hourly wages to the balance of the harvest workers. This was done because they spot-picked the grapes for quality and the orchard set-up entailed a lot of downtime.

From the growers who relied primarily on handpicking and paid by piece rate, we gathered the following data:

- Harvest worker demographics were similar to that of the cherry industry.
- Typically, picking begins early in the morning and is finished in early afternoon (7 am – 1 pm or 7am – 2 pm), representing 6 – 8 hours of picking per day.
- The vineyards do not generally offer accommodations for harvest workers unless they are hired through SAWP.

#### **Reported Piece Rates Paid by Growers:**

The piece rates being paid by growers varied depending on the location and size of their vineyards, as well as how much they anticipated needing to compete for labour.

- The minimum reported piece rate was \$50/bin. (1 bin = 800 lbs)
- The maximum piece rate was \$70/bin.
- The average piece rate was \$60/bin.

#### **Impact of Increase to Piece Rate:**

The current increase in labour cost seems economically viable for the grape sector. Although grape producers are price-takers, they claim to be able to absorb the cost. All producers we interviewed paid market rates, which are above the minimum standards.

Many producers interviewed perceived an increase in mechanized harvesting. In practice, however, this was only true of producers with large estates. One important stakeholder claimed that a vineyard needed more than 150 acres of producing vines for mechanization to be viable; furthermore, machinery costs are prohibitive to all but large-scale producers. Typical vineyard infrastructure is not conducive to machine picking, in any case: either the rows are too narrow or the tilted grounds make machine picking infeasible. Much of the grape sector in B.C. thus depends on hand harvesting, especially among small and medium producers.

### **Impact of Minimum Wage as a Floor:**

In the grape sector, the impact of using the general minimum wage as floor seems minimal. Most pickers are already making above this rate. Present margins are reportedly stable enough to be able to pay the minimum wage to any workers who do not meet optimal production levels.

### **Record-keeping:**

Most growers interviewed shared similar record-keeping systems. Some larger operations had more complex methods of record keeping, but most were very basic. Generally, a harvest worker and grower or supervisor both keep track of how much fruit has been picked: units of harvest (e.g., bins or boxes) are weighed on-site by the grower supervisor with the harvest worker present. The recorded weights are then totalled at the end of the day. Many growers printed off a list for the harvest workers to review the following morning to ensure the amount picked was correct. Growers reported that there were seldom disputes; when there were, they were handled immediately in the orchard with the harvest worker. Most producers and workers said that there were rarely problems with the harvest-documenting process.

## **6.2 Grower Input for Berries**

Several growers and industry representatives were contacted to provide input. Eleven berry growers were interviewed and all three producers' associations (raspberry, strawberry, and blueberry) were contacted. Interviews were also conducted with the B.C. Blueberry Council and the B.C. Ministry of Agriculture Berry Specialist.

### **1. Blueberries:**

Ten blueberry growers were interviewed, all with farms in the Lower Mainland. The farms had a combined size of 1,166 acres producing 11.97 million lbs, or 8.8% of B.C.'s 2017 annual blueberry production. Together, the 10 growers employed over 1,200 harvest workers, of whom 88 were hired through SAWP.

Eight growers hand-harvested more than 50% of their crop, with the objective of hand-harvesting the entire crop for the fresh market if possible.

Results from our interviews with blueberry growers include the following data:

- Nine growers used a labour contractor, mainly because they would not be able to procure harvest workers without one. Despite the added expense of hiring through a contractor, this was effectively their only option.
- Pickers were reported to live locally, mainly in Delta and Surrey, with some living in Abbotsford and Mission. Most were immigrants from India between 50 and 75 years old, approximately 50 – 55% female, spoke very little or no English, and did not have drivers' licenses.
- Grower consensus was that the productivity of the workers was widely varied. Due to the age of the harvest workers, though, their productivity was typically low-to-average.
- Growers explained that the harvest workers' productivity varied significantly depending on berry variety, time of season, and the harvest workers themselves.
- Harvest rate between different varieties such as Duke and Elliot also played a role in picker productivity. The variance in productivity was 100 – 500 lbs per day for Duke and 40 – 250 lbs per day for Elliot (based on a 10 hour picking day).

### **Record-keeping:**

All growers reported similar record keeping. Picker cards are prepared in triplicate: one for the harvest worker, one for the contractor, and one for the grower. The picker cards are similar from farm to farm, but there is not a regulated standard form. The amount of berries harvested is punched onto the picker card as the fruit is harvested and picked up from the field throughout the day, weighed directly in the field or at an on-site weigh station in front of the harvest worker. Growers reported that there were seldom disputes, and when there were, they were dealt with immediately. If harvest workers' berries included rocks, sticks, or unripe fruit, this was also dealt with immediately, as the produce is unsalable without being re-handled and cleaned. Growers reported that this was not really an issue or concern for them, however, as picking quality tends to be the responsibility of the labour contractor.

### **Reported Piece Rates Paid by Growers:**

The piece rates being paid by growers varied significantly, with many paying substantially more than the 2018 minimum piece rate of \$0.438/lb. This is due, in part, to many growers paying harvest workers through a labour contractor, which drove up labour costs for the growers. Piece rates paid directly to harvest workers tended to be lower.

- The minimum piece rate paid directly to harvest workers was \$0.438/lb. This was often increased by \$0.05/lb for workers harvesting Elliots.
- When paying harvest workers directly, growers' piece rates ranged between \$0.0438/lb and \$0.645/lb.
- The minimum piece rate paid via labour contractor was \$0.55/lb, with most paying \$0.65/lb – \$0.85/lb.
- Piece rates paid via contractor could rise to \$1.00/lb for days when growers especially needed harvest workers.

Growers were not all aware how much labour contractors paid harvest workers.

## **2. Strawberries:**

Five strawberry growers were contacted, all with farms in the Lower Mainland. The farms had a combined size of 352 acres producing 11.97 million lbs, or 39.5% of B.C.'s 2017 annual strawberry production. Together, these five growers employed over 350 harvest workers, 82 of whom were hired through SAWP.

All strawberries are hand-harvested; there is no mechanized method for picking strawberries.

Results from our interviews with strawberry growers include the following data:

- Two growers picked the fruit solely with SAWP workers who were paid hourly. The growers could not find local labour.
- The remaining three growers paid local harvest workers using the piece rate system. Two stated that they paid harvest workers hourly for spot picking, cleaning up a block, or if crop yield was low.
- All growers using local labour sourced their labour through a contractor.
- Growers estimated that approximately 75 % – 80% of their total hand-picked crop is harvested by workers paid by piece rate.
- Piece rates paid to labour contractors varied between \$0.48/lb and \$0.54/lb. It was not known how much the contractors paid harvest workers; the minimum regulated piece rate was \$0.38/lb.

## **3. Raspberries:**

Four raspberry growers were contacted, all with farms in the Lower Mainland. The farms had a combined size of 317 acres producing 1.8 million lbs, or 11% of B.C.'s 2017 annual raspberry production. Together, these four growers employed over 320 harvest workers.

Industry-wide, 90% of the raspberry crop is machine picked. Three of the growers interviewed handpick more than 40% of their crop to increase quality and shelf life for sale into the fresh market.

- All growers reported using local labour sourced through a labour contractor.
- Growers stated that they primarily paid piece rate, but did pay hourly rates from time to time. They estimated that approximately 95% of their total hand-picked crop is harvested by workers paid by piece rate.
- Piece rates paid to labour contractors varied from \$0.65/lb to \$1.095/lb, with the highest rates correlating to low crop yields. It was not known how much the contractors paid harvest workers; the minimum regulated piece rate was \$0.395/lb.
- Piece rates paid to harvest workers directly employed by the grower, without a labour contractor, varied between \$0.55/lb and \$0.82/lb.
- The growers interviewed did not know the harvest workers' productivity.

Of the 11 berry growers interviewed, some were using a combination of minimum hourly wage and piece rate, but rarely. Growers would choose to pay minimum hourly wage for two reasons. First, if crop yield was low, they could only secure labour by paying the minimum hourly wage. Second, if the crop was harvested by SAWP workers, growers were legally obligated to pay them the minimum hourly wage. Nevertheless, nine of the berry growers stated that neither a regular combination of hourly and piece-rate wages nor using minimum wage as a floor would work for them.

### **Economic Impact of Rising Piece Rates:**

Producers in the berries industries commented that rising costs would render them less competitive in the marketplace. Competing with American prices was hard for them, since American producers generally have lower costs. Since berry producers are price takers, rising costs increase their business and financial risks. Any increases in costs make these growers even less competitive and will continue to decrease their already dwindling margins.

### **Impact of Minimum Wage as a Floor:**

Due to steadily rising crop prices, strawberries margins seem to be able to absorb rising labour costs. Raspberry and blueberry prices have been relatively flat for the last ten years, with a slight upward trend over the last few years. These two crops would not be able to absorb the rising costs as well as strawberries.

Margins aside, the impact of adopting the minimum hourly wage as the floor would impact all berry sectors' viability, employment, and degree of mechanization. The greatest impact would be on fresh-market berries, which are mostly hand-picked at present. New and emerging technologies are making machine-picking more viable for the fresh market, and producers would turn to these where possible.

Most raspberry producers stated that they would either rely solely on machine picking or exit the market altogether. Some commented that increased labour costs would make

them much less competitive given workers' relative unproductivity together with price competition from California. New, larger berry varieties for picking are scarce in the province.

Blueberry producers claimed they would rely on technology, but not machine-picking. Some producers said they would rely on temporary foreign workers for fresh-market picking, as well as any productive local workers they could find. Unproductive workers, they said, would not be able to pick. Others claimed they would adopt new varieties that allow machine picking for the fresh market. Only one grower of 11 interviewed stated that exiting the market was his best option; he reported that costs are getting too high for berry farming to remain a sustainable venture for him.

### **6.3 Grower Input for Vegetables (Peas, Beans and Brussels Sprouts)**

According to previous reports (Thompson, 2008; Zbeetnoff & McTavish, 2011), most vegetables are harvested mechanically, thus making piece rates for vegetables insignificant.

Because all Brussels sprouts are harvested mechanically, no piece rate was involved. Approximately 25% of beans and peas are hand-harvested, with the remainder machine-harvested and -processed.

One vegetable grower was interviewed for this study. He provided the following data:

- Piece rates paid to labour contractors for the picking of peas and beans were \$0.425/lb in 2018. It was not known how much the contractor paid harvest workers; the minimum regulated piece rate was \$0.259/lb for beans and \$0.323/lb for peas.
- Exact harvest worker productivity was not known, but was estimated to be 400 – 500 lbs in an 8-hour day for a high-productivity worker.

#### **Economic Impact of Rising Piece Rates:**

As the cost of hand harvesting continues to rise, the grower reported that he would either machine-harvest or replace the peas and beans with another crop.

#### **Impact of Minimum Wage as a Floor:**

The grower stated that it would be difficult and costly to compensate workers with the minimum wage as a floor. The lack of harvesting incentive would reduce productivity, he said, while the minimum-wage floor would make low-productivity harvest workers too costly to employ. The grower said he would need to re-evaluate his cropping plan, and perhaps replace the crop.

## **6.4 Grower Input on Mushrooms**

Gaining input from growers and harvest workers in the mushroom industry proved extremely challenging. While we were able to speak with a grower and an industry expert, no actual data was collected.

All mushroom crops are hand-harvested. This study has a lack of data on how many hours per day the workers pick in this industry, however. The grower interviewed stated that hours can be highly variable.

### **Economic Impact of Rising Piece Rates:**

An increase to the piece rate will make the mushroom industry less competitive. They export mushrooms into the U.S. and this will increase their costs. Their U.S. competitors will not have the same increase. The mushroom industry is unique because the shelf life of fresh mushrooms is relatively short, making it more difficult to transport the mushrooms further. Therefore, local grocery stores would find it harder to purchase mushrooms cheaper farther away. Therefore, there may be some opportunity for the growers to pass on the increased costs to consumers, increasing the price of mushrooms. This will impact both the local and international markets. In international markets the increase in cost will make the B.C. mushrooms less competitive. Since the consumer will be absorbing the cost and all harvest needs to be hand-picked, there will be no effect in employment.

The mushroom industry seems to be viable enough to adapt to a payment scheme with minimum wage as a floor. The grower suggested that, given the current piece rate on mushrooms (\$0.26/lb), harvest workers are making \$7.80 – \$19.50 per hour. Assuming a daily shift of 8 hours and given this same rate, a harvest labourer would need to assume a rate of 49 pounds per hour, or 389 pounds a day to make the current general minimum wage (\$12.65). With an increase in both minimum piece rate and general minimum wage, pickers would have to harvest around 48 pounds per hour, or 382 pounds per 8-hour day, to make at least \$13.85 per hour.

This system would benefit the mushroom sector in so far as it would alleviate current safety issues. By applying a general minimum wage, the incentive for malpractice would be reduced and there would be room for more transparency in the sector overall.

## **6.5 Grower Input on Daffodils**

We spoke to the B.C. Ministry of Agriculture Specialist who received information from a daffodil grower. There are very few growers, and only two large growers. It was estimated there are approximately 70 to 110 acres in production in the Fraser Valley and another 100 acres on Vancouver Island. The majority is harvested using workers from the seasonal agriculture worker program (SAWP) and are paid hourly. Some

growers do pay piece rate. Productivity and piece rate paid was not known. Because daffodil production is so low and most is paid hourly, they are least affected from the increase to piece rates.

## 6.6 Grower Summary Comments

- **No changes recommended to the current system.** Overwhelming grower consensus that no changes are needed to the piece rate system. Of the 31 growers interviewed, 90% recommended no changes to the current piece rate system. They felt the system was not broken and self-regulating. Two of the growers felt the piece rate should be increased with minimum wage and one grower stated minimum wage should be used as a floor and piece rate as an incentive. Several stated that it would be devastating to their industry if all existing harvest workers had to be paid minimum wage, particularly in the berry sector.
- **Varying responses to deal with increasing labour rates.** Several growers said they would increase mechanization or increase the amount of foreign workers they would have. Several stated that they would need to downsize, even exit the industry if labour costs continue to rise.
- **Support for government-regulated minimum piece rates.** Of the 31 growers interviewed, 90% were supportive of the government continuing to set the minimum piece rate. Some stated that the market place would dictate a fair piece rate because the demand for labour exceeds the labour supply. The vast majority were supportive of government continuing to set a minimum piece rate, but said the rate should be determined with input from industry.
- **Concern over not having the piece rate tool.** Growers offered various perspectives on what they would do if piece rates were no longer in place. Growers in the Okanagan were seriously concerned that harvest workers would not come to B.C. to harvest fruit without the piece-rate incentive. The alternative would be to bring in SAWP workers, which is very expensive; it also involves accommodation requirements that some growers may not be able to provide under current provincial and municipal building regulations.
- **60% said the January 2019 increase would have a huge negative impact on them.** The remaining 40% of growers did not yet know how the increase would impact them, but it would cost them.

### Overall Piece Rate Comments:

Growers preferred the piece rate system for the following reasons:

1. **Managing costs.** Using the piece rate system allows growers to determine their harvest costs and treat them as a true variable expense, tied directly to production and revenue.
2. **Connecting costs to productivity.** Using the piece rate system incentivizes the harvest workers, ideally boosting their productivity.

3. **Ability to employ all workers.** By paying the piece rate, growers were able to hire all workers regardless of their level of age, experience, rate of harvesting, etc. because they only paid for the work that was done.
4. **Easier to manage and supervise.** Many of the growers preferred the piece rate system as it was easier to supervise and manage large crews of workers, which could be several hundred workers in some cases.
5. **Workers can earn more and it is more fair.** Growers felt the piece rate was a fair mechanism to compensate their harvest workers as they could earn more if they were more productive, and they were only paying for work that was done.
6. **Workers prefer it.** Several growers shared that workers prefer to be paid piece rate.

## 7.0 Cost to Industry from a Piece Rate Increase

Increases to the piece rate system will increase costs of production for growers. The cost to industry has been calculated on an aggregate level, as well as farm-level specific to the blueberry industry based on an enterprise budget prepared by several growers and B.C. Ministry of Agriculture.

### 7.1 Aggregate Level Cost Impacts

The increase to piece rates will increase labour costs for all 15 piece-rate regulated crops in B.C. We have calculated the cost to industry of the 11.5% piece-rate increase to be \$7.7 million. This figure excludes other labour costs and any harvesting done by workers paid hourly. It also excludes any other increases to the cost of production. It is based on 2017 production figures and estimated based on the amount of production hand-harvested and paid via the piece rate. The mushroom industry is most impacted, with the blueberry and cherry industries being significantly impacted as well. Nearly 90% of the cost of the increase of the piece rate system will be borne by the mushroom, berry, and cherry sectors alone.

Table 7.1.1 Cost Increase per Industry with New Minimum Piece Rates

Crop	Production (Tons)	% Hand harvested and Paid on a Piece Rate Basis	Amount Harvested by Piece Rate (Tons)	Increased Piece Rate per Ton (\$ per Ton)	Cost to the Industry
Mushrooms	52,167	98%	51,124	\$60	\$3,067,420
Blueberries	67,803	34%	23,256	\$100	\$2,325,643
Cherries	25,887	95%	24,593	\$58	\$1,426,374
Apples	110,996	75%	83,247	\$5.43	\$451,615
Grapes	29,190	54%	15,763	\$10.50	\$165,507
Strawberries	1,432	90%	1,289	\$88	\$113,414
Raspberries	8,227	10%	782	\$90	\$70,341
Pears	5,586	95%	5,307	\$4.90	\$26,003
Beans	2,372	23%	534	\$60	\$32,022
Green Peas	1,678	23%	378	\$74	\$27,939
Plums and Prunes	1,624	95%	1,543	\$12.25	\$18,899
Daffodils*	247,799	50%	123,900	\$0.02	\$2,106
Apricots	875	0%	0	n/a	n/a
Peaches	5,944	0%	0	n/a	n/a
Brussels Sprouts	2,382	0%	0	n/a	n/a
<b>Total</b>	<b>316,163</b>				<b>\$7,727,283</b>

Source: Statistics Canada. Tables 32-10-0364-01; 32-10-0365-01; 32-10-0356-01; 32-10-0021-01

\*Daffodils are measured by bunch (10 stems) and are excluded from the Total Production

## 7.2 Farm-Level Cost Impacts (Blueberry)

The B.C. Ministry of Agriculture developed an Enterprise budget in 2016 for the blueberry sector (Appendix D). It was prepared with input from several berry growers and to be used as a budgeting guide for berry growers. Based on several assumptions, it was estimated that a 40-acre blueberry field after 3 years of mature production would have direct expenses equivalent to 88% of revenue. This leaves little margin for increases in costs of production, particularly labour costs, which is the highest cost. Farms that are smaller will likely experience higher costs of production, as they do not have the ability to gain from economies of scale. Similarly, larger farms may have lower expenses due to economies of scale. However, in both cases, based on this information the margins are positive, but leave little room for increases in costs.

## 7.3 Piece Rate as a Margin of Price

Figures and tables have been created to show the average farm gate prices of apples (see Figure 3), cherries (see Figure 4), grapes (see Figure 5), blueberries (see Figure 6), and mushrooms (see Table 5). These industries are most affected by the increase in piece rates. The blueberry industry showed the piece rate as having the largest cost as a proportion of price.

## 7.4 Using Minimum Wage as a Floor

Using the minimum wage as a floor will raise the marginal cost of handpicked units for every crop when the productivity levels of the worker are below the optimal rate. Two models were developed based on blueberry and cherry picking costs and benefits. Figure 1 illustrates the blueberry model. This shows how minimum hourly wage, worker productivity, and piece rate work together. If a worker picks less than D, they are making less than minimum hourly wage. Anything beyond point D, means the worker is earning more than minimum hourly wage and production allows the grower to minimize the hand-harvesting cost and, if paid with piece rates as incentive, enables pickers to maximize their earnings. The model shows that point C is the average productivity based on the data collected in this study. At point B, the worker would actually be costing the grower money as the harvest worker's productivity is so low that if they are paid minimum wage they would be picking less than even the price of the blueberries that the grower would receive.

Figure 2 illustrates the model for the cherry industry. It is the opposite as harvest workers do earn more than minimum wage on average.

Crops with low margins, like berries and vegetables, cannot afford the increase in marginal cost with low-productivity workers. Employment will change drastically in these sectors as growers move to increase profitability and avoid losses. Mechanized harvesting technologies will be adopted to allow for the machine picking of fresh produce. It is likely employment will shift decisively in favour of SAWP workers, given the tendency for local employment to show signs of low productivity.

## 8.0 Other Jurisdictions

British Columbia's payment system is unique in the Canadian agricultural industry. It is one of two Canadian provinces, along with Quebec, that sets minimum piece rates. B.C. sets these rates for nearly eight times more crops than Quebec does, however. Additionally, it is one of two provinces that does not require piece-rate harvesters to earn at least minimum wage; the other is Nova Scotia.

Several major producers of comparable fruits and vegetables in the United States of America, including Washington, California, Florida, New Jersey and Michigan, use the piece rate system as an incentive for picking. None of these states sets a minimum piece rate, however, and all agricultural workers must be paid their state's minimum hourly wage. In May 2018, a court ruling in the State of Washington determined that all piece-rate farmworkers must be compensated for downtime, including meetings, training, traveling between orchards, and storing equipment (Jenkins, 2018). Time spent climbing ladders and emptying bins would not require separate pay.

A harvest worker representative told us many pickers travel to Australia during B.C.'s winter months to work the fields. The system in Australia is complex and differs from the

North American piece rate system. Harvest workers are assigned one of five rankings, depending on their expertise and responsibilities (e.g., quality assurance, safety oversight). Each rank has a minimum wage floor that growers must pay. The picker only qualifies for piece-rate pay if their rate would exceed 15% of their minimum wage. The piece rates are negotiated between the producer and the harvest worker, rather than being set by the government.

*Table 8.1. Other Jurisdiction Agricultural Payment Schemes*

Jurisdiction	Use of Piece Rates?	Piece Rates Set by Government	Required Minimum Hourly Rate
British Columbia	Yes	Yes - 15 crops	Not required for piece-rate payments in harvesting the 15 crops regulated by government
Alberta	No	..	15.00 CAD / hr - effective Oct 1st, 2018
Saskatchewan	No	..	11.06 CAD / hr - effective Oct 1st, 2018
Manitoba	No	..	11.35 CAD / hr - effective Oct 1st, 2018
Ontario	Yes	No	14.00 CAD / hr - effective Jan 1st, 2018
Quebec	Yes	Yes - 2 crops	12.00 CAD / hr - effective May 1st, 2018
Newfoundland & Labrador	Yes	No	11.15 CAD / hr - effective April 1st, 2018
New Brunswick	Yes	No	11.25 CAD / hr - effective April 1st, 2018
Nova Scotia	Yes	No	Not required for piece-rate payments in harvest of fruits, vegetables or tobacco
Prince Edward Island	No	..	11.55 CAD / hr - effective April 1st, 2018
Washington	Yes	No	11.50 USD / hr - effective Jan 1st, 2018
California	Yes	No	11.00 USD / hr - effective Jan 1st, 2018
New Jersey	Yes	No	8.60 USD / hr - effective Jan 1st, 2018
Connecticut	Yes	No	10.10 USD / hr - effective Jan 1st, 2017
Michigan	Yes	No	9.25 USD / hr - effective Jan 1st, 2018
Australia	Yes	No	Ranges from 18.93-22.04 AUD / hour depending on the picker's level of experience - effective July 1st, 2018

\* 1.36 CAD/ USD on December 22, 2018

\*\* 0.96 CAD/ AUD on December 22, 2018

## 9.0 Conclusions

This study found that a significant amount of harvest workers were not making the general minimum wage in the province (See section 5.3 where this data is presented). Harvest workers in the Lower Mainland usually have lower productivity, due mainly to their age, and most of them earn below B.C.'s general minimum wage. Despite their youth and other demographic advantages (see Section 4.1), harvest workers in the Okanagan are also exposed to the risk of low wages, especially in their first year as harvest workers. Even the highest-paying crop in the region still had workers earning less than the minimum wage. The only workers not experiencing this in piecework are temporary foreign workers. SAWP program policies protect them from earning less than minimum wage on an hourly basis, regardless of the employer's payment scheme.

The different factors affecting the productivity and earning potential for the workers are skill and experience, motivation and productivity, crop yield potential, and unpaid downtime activities. The only factor that the worker can directly control is motivation and productivity. Productivity can depend on uncontrollable factors, however, including age, physical ability, weather, and crop yield.

Harvest workers in the Okanagan prefer piece-rate payment over hourly wages, but some agree that there should be a minimum wage floor. Workers in the Lower Mainland prefer hourly payment because several do not produce enough to make sufficient income by piece rate.

Some sectors, including tree fruits and grapes, already use a combination of hourly wages and piece rate incentives; harvest workers in these sectors tend to be younger and more productive than those in the Lower Mainland. Other sectors, including berries and vegetables, would see growers move to increase mechanization and employ more temporary foreign workers in the fields. Berry growers, in particular, shared that up to two-thirds of their existing work force would be unemployable if they had to pay them the minimum hourly wage for each hour that they are in the fields. Growers in the Lower Mainland claim that workers would not be hireable under general minimum wage since their marginal costs would increase substantially due to their low productivity capabilities.

The current 2019 increases in piece rates are generally economically viable, since most industries seem to be either paying above the current minimum rates or have margins able to absorb this increase. It is not yet known if piece rates will increase even higher. Some sectors, such as apples, blueberries, raspberries and pears, have been experiencing price declines and tightening margins; growers in these sectors are less able to absorb any cost increases. The apricots and peach sectors have felt little effect from piece-rate increases, but are experiencing increasing labour costs due to minimum wage increases. The raspberry, blueberry, and vegetable sectors would continue to rely on mechanized harvesting and new varieties that allow machine picking for fresh markets. The cherry, grape, and mushroom sectors represent the crops with highest margins, mainly due to each crop's unique market factors. Based on the piece rate price margin tables, these industries are still viable after the piece rates increases for handpicking (See section 7.3).

Several crop sectors do not rely on government-set rates to pay their workers. The rates from the tree fruit and grape sectors seem to be set by the market. However, 90% of all growers interviewed recommended that the government set minimum industry standards to avoid malpractice and establish a baseline. All agreed that industry input is required when making any changes to the piece rates.

There remains a major shortage of information from the labour contractors in the Lower Mainland and in the mushroom industry regarding hours worked. This is a matter of

great concern, since many of the contracted workers apply for EI. Additionally, the lack of supervision in the mushroom industry entails safety risks. The lack of transparency in the labour market makes it difficult to assess what the main challenges are for this sector and what changes should be made.

## **9.1 Top 10 Findings:**

- 1. Of 178 harvest workers surveyed in the Okanagan, 94% prefer the piece rate system. If the piece rate system were abolished, 87% of harvest workers surveyed would find other work.**

Pickers find it motivational to compare their productivity to other harvest workers'. They enjoy the potential of large earnings and the sense of freedom that this system allows given the low supervision required. The harvest workers preferred the piece rate system primarily due to the freedom to work as much or little as they wanted and the good-natured competition with other harvest workers; earning potential was a secondary factor.

- 2. 90% of growers surveyed support the government continuing to set minimum piece rates; however, they believe it should be done with industry input.**

Most growers agreed a minimum benchmark for piece rates and minimum hourly wages should be set, and that the government should set those rates. They do not want competition abusing industry rules or leading to the mistreatment of workers, and agree that a government-regulated baseline would prevent such abuses.

Some growers did express concerns about the potential for minimum piece rates to be set too high, depleting their already thin margins. Only 2 growers maintained that piece rates should be solely market-driven, stating that the short supply of labour would dictate fair piece rates.

- 3. 100% of growers surveyed stated that any increases to piece rates or changes to the system need to be done gradually, with industry input, and with advance notice so growers have time to adjust and plan.**

- 4. All growers surveyed, with the exception of mushroom growers, agreed that the current piece rate system works. Most growers preferred the piece rate system for quantitative and qualitative reasons.**

Growers need to ensure their crop is picked at a fast pace in order to get it harvested in time. If harvest workers were paid hourly, growers suggest, productivity may fall and crops will not be harvested fast enough. This poses risks to fruit quality, pricing, and profit margins. Several growers interviewed prefer the piece rate system because it allows for them to fix their costs on a variable basis. Particularly in the berry industry, growers are not only price takers, but also do not know what price they will receive for the fruit. By paying on a piece-rate basis, they can treat labour costs as true variable costs, which assist in calculations and help

ensure a profit margin at season's end. Growers also prefer the piece rate system due to reduced supervision responsibilities.

**5. The piece rate system allows all people the opportunity to work.**

In a piece rate system, harvest workers' earnings are directly and measurably based on how much they pick. Growers are thus willing to hire all types of workers, regardless of experience level. Low-productivity workers in the Lower Mainland could potentially cause losses to growers if they were paid on hourly basis. Given their low productivity, hourly wages would cause marginal costs to increase drastically.

**6. Some producers, especially in fruit sectors, are already practicing the FWC's recommendations.**

Some producers, mostly grape growers in the Okanagan, are already paying a combination of hourly wage and piece rates, with some ensuring their harvest workers are paid at least the minimum hourly wage. Most of the time, they do this due to low crop yield and consequently low picker productivity. In that region, a minimum wage floor would not have as severe an effect as in the Lower Mainland.

**7. Cost to industry of the 2019 increase to piece rates is estimated to be \$7.7 million.** The main industries affected are mushrooms, blueberries and cherries that will incur 90% of the increased labour costs.

**8. Setting the minimum wage as a floor will affect employment and mechanization, especially in the Lower Mainland.**

Grower responses related to setting the minimum wage as a floor were varied. Low-productivity workers would not be able to work the fields under a minimum required wage, since costs would rise untenably for producers. Berry growers surveyed claimed that two-thirds of their existing labour force would not be hireable if they are required to pay the harvest workers the minimum hourly wage, and that they would need to increase harvest mechanization significantly. This would result in substantially lower industry employment.

**9. Harvest workers had more pressing complaints than the piece rate system.**

Most complaints from harvest workers were not related to the piece rate system. In the Okanagan, most harvest workers complained about treatment, accommodation, and the effect of migrant workers. In the Lower Mainland, most harvest workers complained about treatment, not being given the tools required for the job, and dishonest or harmful production practices. Berry harvesters who expressed a preference for the minimum hourly wage were nevertheless supportive of being paid a piece rate, but felt the current piece rate for berries was too low.

- 10. Price-margin analysis shows that some sectors can absorb the labour cost increases, but the blueberry sector will suffer negative impacts.**  
Mushrooms, blueberries and cherries will be most impacted from the piece rate increase. Margins in the mushroom industry are estimated to be higher than in the blueberry sector. The blueberry sector is large, staffs a large number of harvest workers, and has been experiencing declining margins over the past few years. Further increases in costs will result in even lower margins.
- 11. The piece rate system has many strengths, not all previously highlighted.**
- ✓ Attracts workers from Quebec and other parts of Canada to B.C.
  - ✓ Allows for diverse operations of varying sizes to share the same method of harvesting. (This benefits smaller operations where management is limited.)
  - ✓ Allows for limited supervision.
  - ✓ Allows the workers to be free to determine their own schedule and productivity.
  - ✓ Allows for anyone to be employed.
  - ✓ Encourages increased output, creating time efficiency.
  - ✓ Enables cost accountability by linking costs directly to the crop.
  - ✓ Simple and easy to understand.
- 12. The piece rate system also has several weaknesses.**
- ✓ Some harvest workers make less than minimum wage.
  - ✓ Productivity is not uniform across harvest workers.
  - ✓ Unequal wage distribution because SAWP and other temporary foreign workers must be paid at least the minimum hourly wage, while other harvest workers do not share this safeguard.
  - ✓ Unpaid downtime such as walking in the fields, waiting, and moving buckets, goes uncompensated.
  - ✓ Pressure on workers to work quickly, long hours, and without breaks.
  - ✓ Reduces quality because the focus is on production, speed and efficiency.

## **9.2 Notes and Assumptions**

### **Summary Comments:**

- If piece rates continue to increase, growers will be forced to hire temporary foreign workers and increase mechanization.
- Worker exploitation identified in grower and harvest worker surveys does not arise solely from the piece rate system. (E.g., Provision of water, washrooms, tools, accommodations, work records.)
- Growers compete in the global market place with Washington State, Chile, Peru, and other countries. Long term sustainability and viability is dependent on the growers' ability to compete internationally. Favourable exchange rates for Canadian exporters are currently assisting growers, however cost increases will make them less competitive.

Several assumptions were made in calculating the cost to industry of the increase in piece rates, as well as in determining harvest workers' actual earnings. The assumptions include inferring net harvest worker income based on piece rate, number of hours worked per day, as well as using the regulated piece rates instead of the actual piece rate that growers are paying, are just a few assumptions used in our estimates. The main issue with this study is that necessary information is simply not available and changes from year to year. In reaching our conclusions, we had to make informed assumptions. These have been stated, where applicable, and were arrived in consultation with industry experts, growers, and harvest workers.

### **9.3 Limitations of the Study**

The main limitation of this study is the low sampling of the population in scope. The most difficult part of this study was contacting growers and harvest workers, asking them to participate in the study, and getting useful data. We aimed to have our data represent several farms per sector of different sizes. Due to the lack of participation from some growers and labour contractors, as well as the notably short length of this study, we were not able to execute a statistical representation of the industry.

Some harvest workers are still scared to report anything negative. In addition to language barriers and cultural barriers, many feared negative consequences for speaking with government contractors. Only a few harvest workers were willing to share their information with us. This created gaps in our data, resulting in insufficient information to create an accurate description of what harvest workers experience.

Productivity measurement proved to be another limitation, with the key limiting factor once again being a lack of data. This was especially an issue for Lower Mainland-based sectors. There, productivity is recorded on "picker cards," which are not always collected by growers. No accurate records exist of how long pickers worked on a given day, or how many people were punching the same card. We have been told that it is common for harvest workers to pick in teams (as husband and wife, for example). With these errors in the data, it was impossible for us to calculate accurate productivities for industries such as berries and vegetables. Labour contractors are the stakeholders who would have data on workers' true earnings and, perhaps, productivity. While they are an integral part of the piece rate system, however, they are not obligated to speak with industry or government. No labour contractors participated in this study.

We were able to access harvest worker productivity rates for the Thompson-Okanagan region, but these were mostly provided as season averages. Real productivity would show huge variations throughout the season due to crop availability, a factor exogenous to the pickers. Many tree fruits, for example, bear very little fruit appropriate for picking at the shoulders of the season, thinning out a worker's average production in optimal conditions.

A final limitation of the study lies in its geographical scope. Most of the crops reviewed in this study are produced in the Thompson-Okanagan and Fraser Valley regions. Important agricultural regions in the province, such as Vancouver Island and the Kootenays, were not visited, and are not included in this study.

## 9.4 Recommendations and Further Research

Based on data analysis and industry input, there are several actions and avenues for further research that would benefit the industry.

- **Updating the actual piece rates.** Piece rates do not match optimal productivity levels and should be further studied to set appropriate rates. The current piece rates represent the latest in a series of proportional increases to the rates first set in 1981. There has been no adjustment for the new agricultural practices developed and adopted in the almost three decades since. Piece rates need to be re-examined with the following questions in mind:
  - Are piece rates still relevant? For example, peaches and apricots are a sensitive tender fruit, and their harvest is currently paid per hour. Perhaps there is no longer a need to have regulated piece rates for these crops.
  - Is the piece rate reflective of current varieties and crop harvesting methods? There have been changes to varieties in the berry, cherry, and apple industries over the past decade. The piece rate has not been adapted to represent changes to the fields and orchards that have been made.
- **One picker per picker card, with hours recorded on the card provided in triplicate to the grower, harvest worker and labour contractor (if applicable).** This would facilitate the determination of how much harvest workers earn per hour. There also needs to be record-keeping improvement for productivity and work time. Many farms, especially in the Lower Mainland, do not currently record this, since they register only what they pay to labour contractors. Having no accurate information about work hours and productivity levels is a cause for alarm, since, for example, these figures are required for EI applications. It also does not allow us to accurately calculate payment rates for Lower Mainland employees, who report the highest levels of piece-rate payment abuse.
- **Audits and inspections to be completed without notice.** Harvest workers directly requested this recommendation to us several times. This will ensure growers are following regulations on a day-to-day basis, as well as providing a means to monitor undocumented workers in the province. Unannounced audits would be more likely to generate unbiased results, which workers allege are currently manipulated by growers and contractors.
- **More involvement of labour contractors in industry analysis.** Labour contractors are an integral component of the industry and there needs to be a mechanism in place to monitor their work and work together with the industry.

- **Safety and labour inspections in the mushroom sector.** The mushroom sector offered the least input to and willingness to participate in this study. Historical reports of safety issues and undocumented workers are a great concern.
- **Phone line or other anonymous reporting method.** Exploited workers need a means to anonymously contact someone and ask for help, without it coming back to the employer that they have done so. This cannot be overlooked. Such a service would need to be available in several languages, including Punjabi and Vietnamese.
- **Other methods to incentivize productivity.** New productivity incentives would allow wages to increase (which will benefit workers) while ensuring total output increases without affecting unitary cost (which will benefit growers). Compensation related to productivity of the harvest workers should be considered.
- **Funding into improving accommodations for tree fruit and grape pickers in the Okanagan.** Additional funding is required for more accommodations for harvest workers in the Okanagan. Perhaps this is an item that could be incorporated into existing farm programs. For example, as a BMP (Best Management Practice) in the existing Environmental Farm Plan; an item under Growing Forward funds; or another government program. But we do recommend that growers provide at least running water and a warm shower to all harvest workers. The ability to refrigerate food and wash clothes would be of great benefit, as well.
- **Exploring a mechanism to legally permit existing foreign workers who are here.** Several growers stated that there are already foreign workers here that are willing and able to work. They are not able to hire them because they are not legally permitted to work in Canada. If there was a program in place, where these workers could receive a temporary work permit that would help alleviate the labour shortage problem.
- **Continued and increased investment in technology for agriculture.** Increased investment in technology and development to increase agricultural productivity for all sectors is highly recommended. With high levels of productivity, both workers and growers benefit by increases in earnings. Moreover, if the FWC's recommendations regarding the minimum hourly wage were implemented, the only way to minimize cost for producers and maximize earnings for workers would be to increase productivity per worker. This technology could involve new varieties, mechanization, research on better production practices, or optimization of farm layout — among other options. The largest gains to productivity and efficiency for agriculture will be through technology, and that must be supported.

#### **Additional Research:**

- Calculations based on grower reference margins and/or actual financial statements from a reasonable sample size.

- Feasibility study to be completed on the berry sector, including a pilot study using technology to monitor harvest productivity levels. This was supported by the B.C. Blueberry Council, as well as several growers. There is currently no continuous data available that describes the harvest workers in B.C.. Having statistics from workers would prove useful in measuring the real impact of policy changes in the agricultural sector. There is a constant claim that the labour supply for this sector is low. Having an actual measurement could help address this issue.
- Time and motion study to inform adjustments to piece rates in light of new varieties and production techniques.

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## TABLES

Table 1: Piece Rate Changes Compared to Minimum Hourly Wage, 1992 – 2019

	Unit	1992 (effective Feb. 1/92)	1995 (effective Mar. 1/95)	1996 (effective Mar. 1/96)	1998 (effective Apr. 1/98)	1999 (effective Apr. 16/99)	2000 (effective No. 1/)	2001 (effective Nov. 1/01)	2003 (effective May 15/03)	2011 (effective May 1/11)	2015 (effective Sep. 15/15)	2016 (effective Sep. 15/16)	2017 (effective Sep. 15/17)	2019 (effective Jan. 1/19)	Percent Increase since 1992
Apples	bin	\$ 12.05	\$ 13.16	\$ 13.16	\$ 13.44	\$ 14.46	\$ 15.37	\$ 16.18	\$ 15.60	\$ 17.06	\$ 17.39	\$ 18.06	\$ 18.89	\$ 21.06	75%
Apricots	half-bin	\$ 12.81	\$ 13.99	\$ 15.14	\$ 15.46	\$ 16.63	\$ 17.68	\$ 18.61	\$ 17.94	\$ 19.62	\$ 20.00	\$ 20.77	\$ 21.73	\$ 24.23	89%
Beans	pound	\$ 0.15	\$ 0.17	\$ 0.18	\$ 0.18	\$ 0.20	\$ 0.21	\$ 0.22	\$ 0.21	\$ 0.23	\$ 0.24	\$ 0.25	\$ 0.26	\$ 0.29	93%
Blueberries	pound	\$ 0.30	\$ 0.30	\$ 0.31	\$ 0.31	\$ 0.34	\$ 0.36	\$ 0.38	\$ 0.36	\$ 0.40	\$ 0.40	\$ 0.42	\$ 0.44	\$ 0.49	63%
Brussels sprouts	pound	\$ 0.11	\$ 0.12	\$ 0.13	\$ 0.13	\$ 0.14	\$ 0.15	\$ 0.15	\$ 0.15	\$ 0.16	\$ 0.17	\$ 0.17	\$ 0.18	\$ 0.20	83%
Cherries	pound	\$ 0.16	\$ 0.17	\$ 0.17	\$ 0.18	\$ 0.19	\$ 0.20	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.23	\$ 0.24	\$ 0.25	\$ 0.28	73%
Grapes	half-bin	\$ 12.81	\$ 13.99	\$ 13.99	\$ 14.29	\$ 15.38	\$ 16.34	\$ 17.20	\$ 16.58	\$ 18.13	\$ 18.48	\$ 19.19	\$ 20.07	\$ 22.38	75%
Mushrooms	pound	\$ 0.17	\$ 0.18	\$ 0.18	\$ 0.19	\$ 0.20	\$ 0.21	\$ 0.22	\$ 0.22	\$ 0.24	\$ 0.24	\$ 0.25	\$ 0.26	\$ 0.29	71%
Peaches	half-bin	\$ 12.81	\$ 13.99	\$ 13.99	\$ 14.29	\$ 15.38	\$ 16.34	\$ 17.20	\$ 16.58	\$ 18.13	\$ 18.48	\$ 19.19	\$ 20.07	\$ 22.38	75%
Pears	bin	\$ 13.56	\$ 14.81	\$ 14.81	\$ 15.13	\$ 16.28	\$ 17.30	\$ 18.22	\$ 17.56	\$ 19.21	\$ 19.58	\$ 20.33	\$ 21.27	\$ 23.72	75%
Peas	pound	\$ 0.19	\$ 0.21	\$ 0.23	\$ 0.23	\$ 0.25	\$ 0.26	\$ 0.28	\$ 0.27	\$ 0.29	\$ 0.30	\$ 0.31	\$ 0.32	\$ 0.36	89%
Prune plums	half-bin	\$ 13.56	\$ 14.81	\$ 14.81	\$ 15.13	\$ 16.28	\$ 17.30	\$ 18.22	\$ 17.56	\$ 19.21	\$ 19.58	\$ 20.33	\$ 21.27	\$ 23.72	75%
Raspberries	pound	\$ 0.24	\$ 0.26	\$ 0.28	\$ 0.28	\$ 0.30	\$ 0.32	\$ 0.34	\$ 0.33	\$ 0.36	\$ 0.36	\$ 0.38	\$ 0.40	\$ 0.44	83%
Strawberries	pound	\$ 0.23	\$ 0.25	\$ 0.27	\$ 0.27	\$ 0.29	\$ 0.31	\$ 0.33	\$ 0.31	\$ 0.34	\$ 0.35	\$ 0.36	\$ 0.38	\$ 0.42	84%
Daffodils	bunch (10 stems)	-	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.13	\$ 0.13	\$ 0.14	\$ 0.14	\$ 0.15	\$ 0.15	\$ 0.17	54%
														Average	77%
Hourly Minimum Wage		\$ 5.50	\$ 6.50	\$ 7.00	\$ 7.15	\$ 7.15	\$ 7.60	\$ 8.00	\$ 8.00	\$8.75, \$9.50	\$ 10.45	\$ 10.85	\$ 11.35	\$12.65, \$13.85	130%

Table 2: Production of Tree Fruits and Grapes in B.C. (2016)

Region:	Apples		Cherries		Grapes		Pears		Small Fruit*	
	Acres	% of BC	Acres	% of BC	Acres	% of BC	Acres	% of BC	Acres	% of BC
Cariboo	11	0%	3	0%	17	0%	2	0%	5	0%
Kootenay	159	2%	515	11%	134	1%	10	2%	62	3%
Fraser Valley	239	2%	93	2%	461	5%	65	10%	97	5%
Nechako	4	0%	1	0%	-	0%	1	0%	2	0%
North Coast	-	0%	-	0%	-	0%	-	0%	-	0%
Peace River	-	0%	-	0%	-	0%	-	0%	-	0%
<b>Thompson-Okanagan</b>	<b>8,757</b>	<b>90%</b>	<b>4,262</b>	<b>87%</b>	<b>8,547</b>	<b>93%</b>	<b>488</b>	<b>76%</b>	<b>1,762</b>	<b>88%</b>
Vancouver Island-Coast	518	5%	-	0%	-	0%	73	11%	71	4%
<b>Grand Total</b>	<b>9,688</b>		<b>4,874</b>		<b>9,159</b>		<b>639</b>		<b>1,999</b>	

\*Apricots, Peaches and Prune Plums

Statistics Canada. Table 32-10-0417-01 Fruits, berries and nuts <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210041701>

Table 3: Production of Berries in B.C. (2016)

Region:	Blueberries		Raspberries		Strawberries	
	Acres	% of BC	Acres	% of BC	Acres	% of BC
Cariboo	3	0%	9	0%	5	1%
Kootenay	20	0%	35	1%	19	3%
<b>Fraser Valley</b>	<b>22,734</b>	<b>96%</b>	<b>2,885</b>	<b>91%</b>	<b>309</b>	<b>57%</b>
Nechako	2	0%	4	0%	2	0%
North Coast	-	0%	3	0%	3	1%
Peace River	-	0%	3	0%	2	0%
Thompson-Okanagan	368	2%	74	2%	57	10%
Vancouver Island-Coast	437	2%	173	5%	149	27%
<b>Grand Total</b>	<b>23,564</b>		<b>3,186</b>		<b>546</b>	

Statistics Canada. Table 32-10-0417-01 Fruits, berries and nuts  
<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210041701>

Table 4: Production of Vegetables and Mushrooms in B.C. (2016)

Region:	Beans		Brussels sprouts		Peas		Mushrooms	
	Acres	% of BC	Acres	% of BC	Acres	% of BC	Sq. ft.	% of BC
Cariboo	4	0%	1	0%	6	0%	-	0%
Kootenay	7	1%	3	1%	11	1%	1,134	0%
Fraser Valley	1,120	93%	411	95%	1,161	93%	2,237,283	98%
Nechako	1	0%	1	0%	3	0%	-	0%
North Coast	4	0%	1	0%	3	0%	-	0%
Peace River	1	0%	3	1%	2	0%	-	0%
<b>Thompson-Okanagan</b>	<b>28</b>	<b>2%</b>	<b>4</b>	<b>1%</b>	<b>31</b>	<b>2%</b>	<b>487</b>	<b>0%</b>
Vancouver Island-Coast	45	4%	8	2%	36	3%	44,421	2%
<b>Grand Total</b>	<b>1,210</b>		<b>432</b>		<b>1,253</b>		<b>2,283,325</b>	

Statistics Canada. Table 32-10-0418-01 Vegetables (excluding greenhouse vegetables)  
<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210041801>

*Table 5. Mushroom Prices and Piece Rates (2007 – 2009)*

<b><u>Mushroom Prices: \$/lb</u></b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018 - Oct</b>
Average Retail Price in Canada	\$3.92	\$3.96	\$3.87	\$3.92
Avg. fresh grower price in Canada	\$1.77	\$2.00	\$2.07	
Avg. fresh grower price in BC	\$1.38	\$1.70	\$1.70	
Minimum Piece Rate in BC	\$0.24	\$0.25	\$0.26	
Minimum Piece Rate as a % of BC Fresh Price	17.4%	14.7%	15.3%	

Sources:

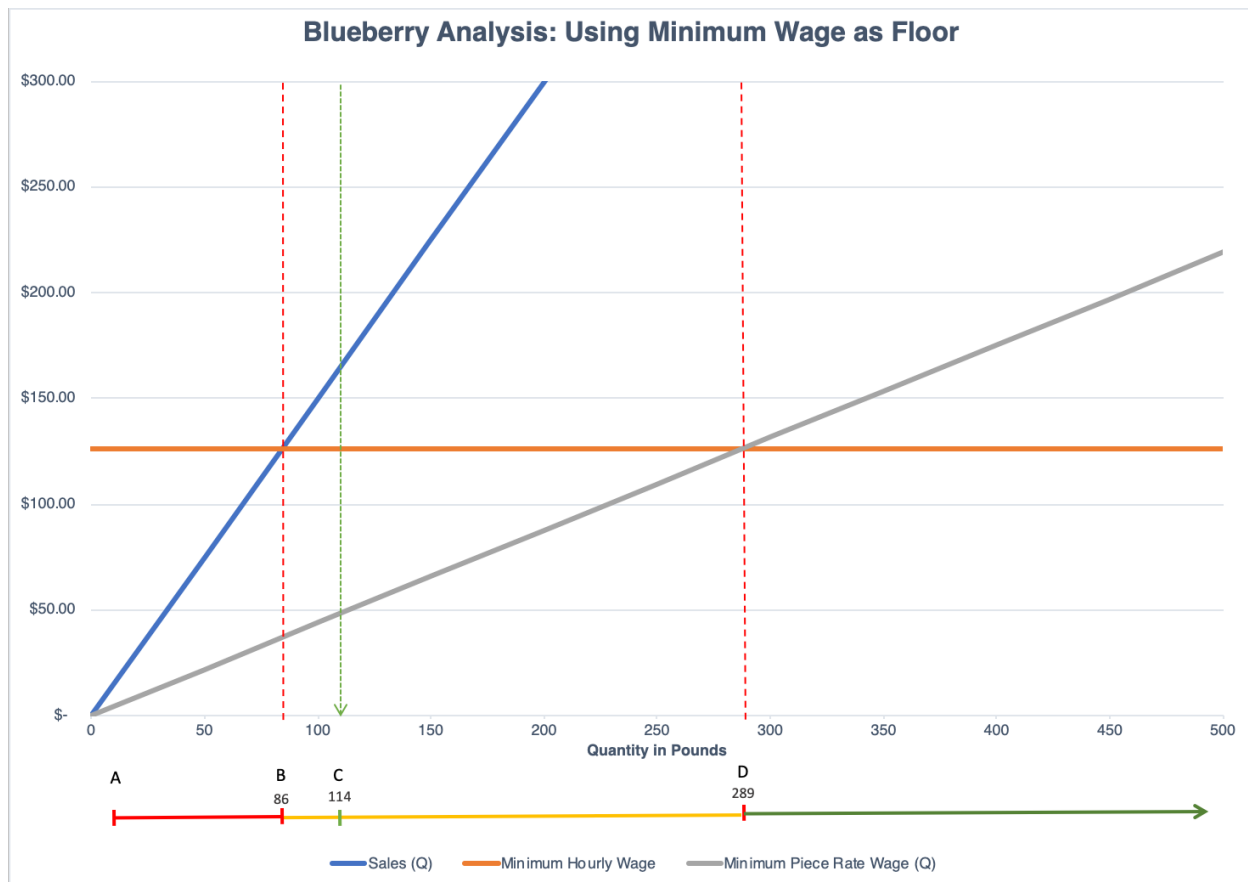
Statistics Canada. Table 18-10-0002-01 Monthly average retail prices for food and other selected products

<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210035601>

Statistics Canada. Table 32-10-0356-01 Area, production and sales of mushrooms

## FIGURES

Figure 1: Blueberry Analysis by Using Hourly Wage as Floor



**AB:** The minimum hourly wage will be greater than the sales made with the quantity picked. Hence, there will certainly be a loss, not including other costs or expenses.

**BD:** Marginal income will be reduced for the grower to cover other costs or expenses. Income margins will be tighter and sometimes negative.

**D:** Breakpoint where grower will maximize his/her marginal income and harvest worker will start earning higher than minimum hourly wage.

**C:** Average productivity

Source: Harvest workers' interviews; n=9

$Q_i$  = Quantity picked measured by pounds

$P$  = Price of blueberries per pound

$P = \$1.50$

$H$  = Provincial minimum hourly wage

$H = \$12.65$

$R$  = Minimum piece rate per pound of blueberries

$R = \$0.438$

$W$  = Average hours worked = 10

$Sales_i(Q) = PQ_i$

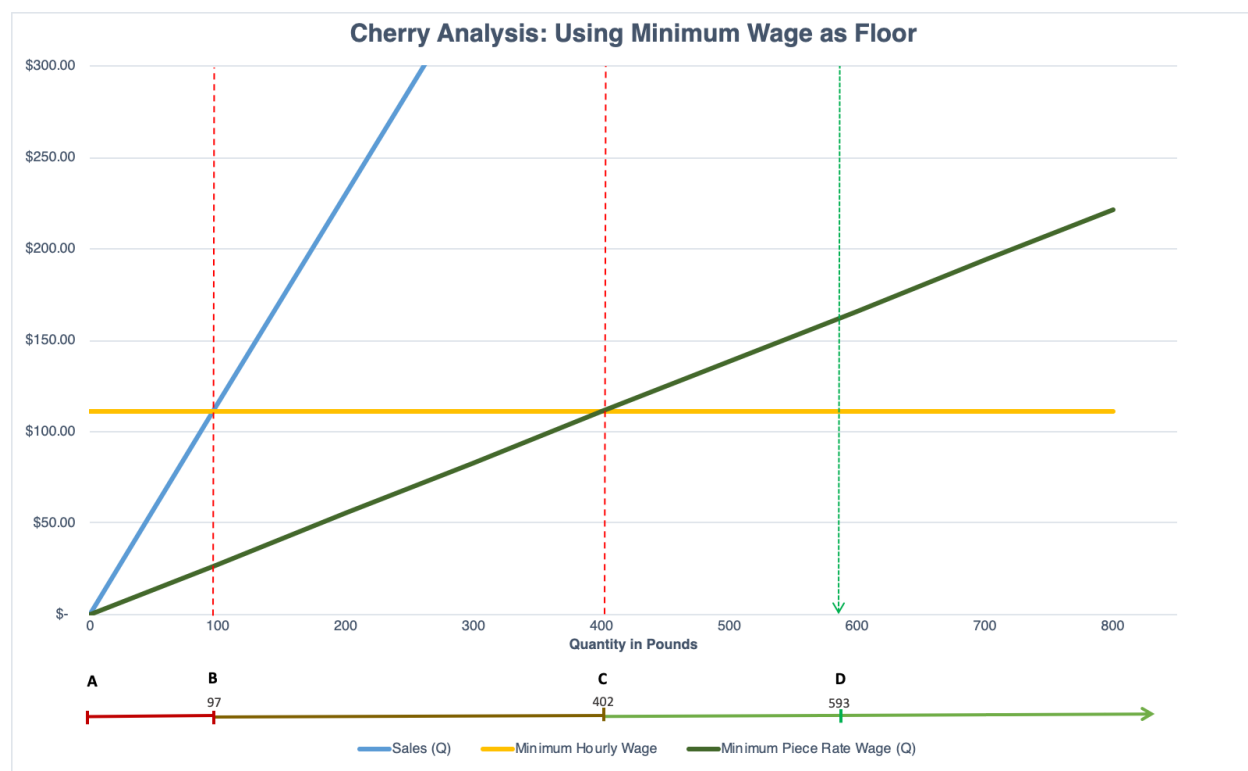
$Minimum\ Hourly\ Wage = HW$

$Minimum\ Piece\ Rate\ Wage_i(Q) = RQ_i$

Notes and Assumptions:

1. Model represents a single picker's work.
2. For the purpose of this analysis, hours work will be constant to the industry average.  
Source: Online Survey (n=178)
3. For the purpose of this analysis, the commodity's price will be constant. The estimate is an average price paid to growers based on co-operative pool prices.  
Source: BCFGA
4. Minimum piece rate per pound was effective January 1<sup>st</sup>, 2019.

Figure 2. Cherry Analysis by Using Hourly Wage as Floor



**AB:** The minimum hourly wage will be greater than the sales made with the quantity picked. Hence, there will certainly be a loss, not including other costs or expenses.

**BC:** Marginal income will be reduced for the grower to cover other costs or expenses. Income margins will be tighter and sometimes negative.

**C:** Breakpoint where grower will maximize his/her marginal income and harvest worker will start earning higher than minimum hourly wage.

**D:** Average productivity of harvest workers.

Source: Productivity Average of Two Cherry Orchards; n=507

$Q_i$  = Quantity picked measured by pounds

$P$  = Price of cherries per pound

$P = \$1.15$

$H$  = Provincial minimum hourly wage

$H = \$12.65$

$R$  = Minimum piece rate per pound of cherries

$R = \$0.277$

$W$  = Average hours worked = 8.8

$Sales_i(Q) = PQ_i$

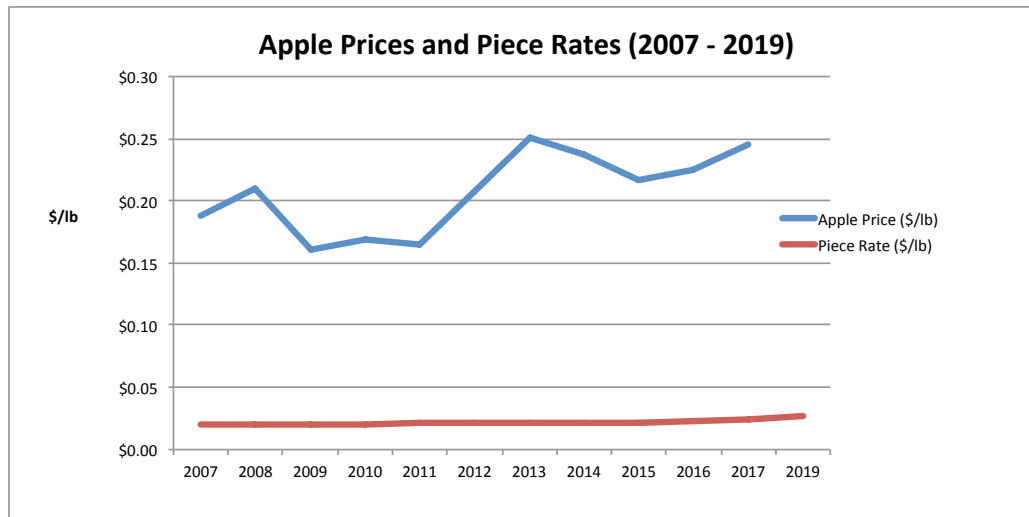
$Minimum\ Hourly\ Wage = HW$

$Minimum\ Piece\ Rate\ Wage_i(Q) = RQ_i$

Notes and Assumptions:

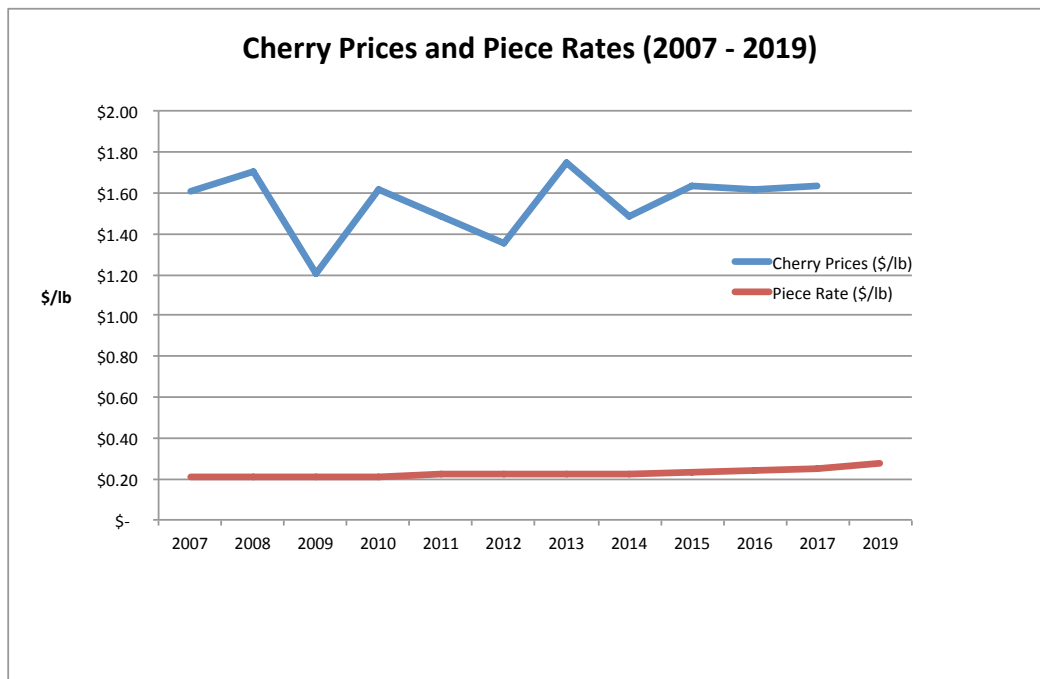
1. Model represents a single picker's work.
2. For this analysis, hours work will be constant to the industry average.  
Source: Online Survey (n=178)
3. For this analysis, the commodity's price will be constant. The estimate is an average price paid to growers based on co-operative pool prices.  
Source: BCFGA
4. Minimum piece rate per pound was effective January 1<sup>st</sup>, 2019.

Figure 3. Apple Prices and Piece Rates (2007 – 2009)



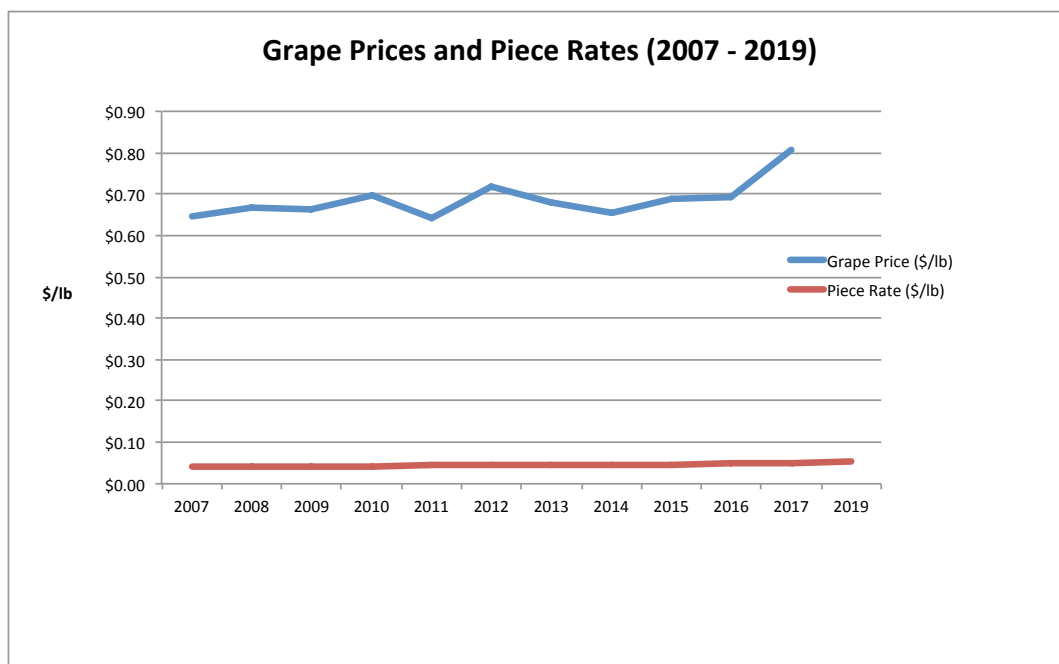
Source: Statistics Canada

Figure 4. Cherry Prices and Piece Rates (2007 – 2009)



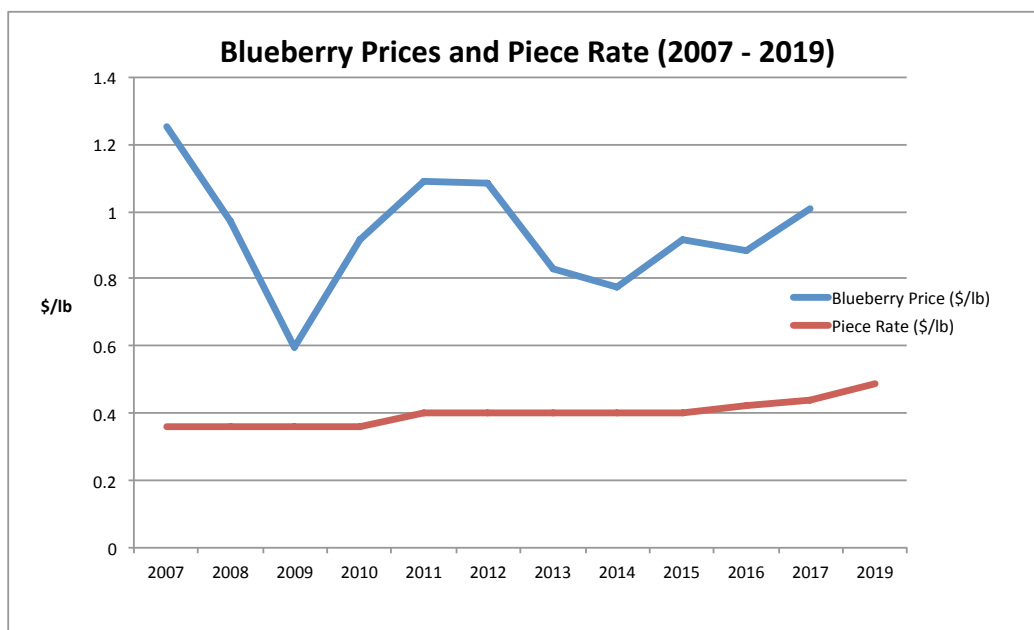
Source: Statistics Canada

Figure 5. Grape Prices and Piece Rates (2007 – 2009)



Source: Statistics Canada

Figure 6. Blueberry Prices and Piece Rates (2007 – 2009)



Source: Statistics Canada

## APPENDIX A: Online Picker Survey (English Version)

### Piece Rate Study.

The following survey is asking for your feedback on agricultural pieces rates that will be used as part of a study for the BC Ministry of Labour. It is to be completed by harvest workers only and it is your opportunity to provide input on agricultural piece rates. Please complete it by being as specific as possible. All disclosed information be kept anonymous and confidential. No individual answer will be publicly displayed or published.

1. How many years have you worked as a picker?

- ☐ 1 year or less  
☐ 2-4 years  
☐ 5-10 years  
☐ More than 10 years

2. How many hours per day do you work on average, when you are harvesting?

3. What is your rate of pay per crop? (Place your answer on the crops that you pick) - Ex. Cherries - \$0.25/ lb; Apples - \$19/ bin

Apples	<input type="text"/>
Apricots	<input type="text"/>
Blueberries	<input type="text"/>
Cherries	<input type="text"/>
Grapes	<input type="text"/>
Peaches	<input type="text"/>
Pears	<input type="text"/>
Plums	<input type="text"/>
Raspberries	<input type="text"/>
Strawberries	<input type="text"/>
Other	<input type="text"/>

4. How much crop do you pick **per day** on average? (Place your answer on the crops that you pick) - Ex.  
Grapes - 6 bins; Cherries - 600 lbs

Apples	<input type="text"/>
Apricots	<input type="text"/>
Blueberries	<input type="text"/>
Cherries	<input type="text"/>
Grapes	<input type="text"/>
Peaches	<input type="text"/>
Pears	<input type="text"/>
Plums	<input type="text"/>
Raspberries	<input type="text"/>
Strawberries	<input type="text"/>
Other	<input type="text"/>

5. If you could choose, how would you prefer to get paid? Why?

- ☐ Per hour ☐ I'm indifferent
- ☐ Piece rate
- ☐ Please state why

6. What impact would it have on you if you did not get paid piece rate, but were paid minimum hourly wage instead?

- ☐ No impact ☐ Positive impact (I would make more money if I were paid minimum hourly wage)
- ☐ Negative impact (I would make less money if I were paid minimum hourly wage) ☐ I would stop being a harvest worker if I were paid minimum hourly wage.
- ☐ Other (please specify)

7. What is your greatest challenge working as a piece rate worker?

8. Where are you from?

- |  |  |
|--|--|
| <input type="radio"/> British Columbia       | <input type="radio"/> Other Canadian province or territory |
| <input type="radio"/> Ontario                | <input type="radio"/> New Zealand                          |
| <input type="radio"/> Quebec                 | <input type="radio"/> Australia                            |
| <input type="radio"/> Alberta                | <input type="radio"/> Mexico                               |
| <input type="radio"/> Saskatchewan           | <input type="radio"/> Jamaica                              |
| <input type="radio"/> Other (please specify) |  |

9. What is your age?

- |                                |                             |
|--------------------------------|-----------------------------|
| <input type="radio"/> Under 18 | <input type="radio"/> 45-54 |
| <input type="radio"/> 18-24    | <input type="radio"/> 55-64 |
| <input type="radio"/> 25-34    | <input type="radio"/> 65+   |
| <input type="radio"/> 35-44    |                             |

10. Any additional comments regarding the piece rate system?

## APPENDIX B: Harvest Worker Questionnaire / Interview Guide (English Version)

### Agriculture Piece Rate Study Worker Survey

Please complete the following survey by selecting one answer per question (unless stated otherwise). In the case of open-ended questions, describe your answer as detailed as possible. Please email the completed survey to: [kwTaylor@mail.ubc.ca](mailto:kwTaylor@mail.ubc.ca).

This survey is anonymous and confidential.

No individual answers will be displayed or published.

Thank you.

#### INTRODUCTION

1. Are you with the SAWP (Seasonal Agricultural Worker Program) or another program?  
Which one?
  - a. Yes, I'm with the SAWP
  - b. I'm with another program: \_\_\_\_\_
  - c. I'm with no agricultural program
  - d. I don't know
2. In which location do you currently work?
  - a. Fraser Valley
  - b. Okanagan
3. How long have you worked for this company? (Use option [b] if less than one year)
  - a. \_\_\_\_\_ years
  - b. \_\_\_\_\_ months
4. How long have you worked as a harvest worker? (Use option [b] if less than one year)
  - a. \_\_\_\_\_ years
  - b. \_\_\_\_\_ months
5. How did you hear about this job?
  - a. Online
  - b. Been here before
  - c. Employment office
  - d. Friend or family reference
  - e. Other: \_\_\_\_\_
6. How many farms/orchards do you plan to harvest in this year (2018) in total?

a. 1	e. 5
b. 2	f. 6
c. 3	g. 7 or more farms
d. 4	

7. How many farms/orchards did you harvest last year (2017) in total?
- |      |                                 |
|------|---------------------------------|
| a. 1 | e. 5                            |
| b. 2 | f. 6                            |
| c. 3 | g. 7 or more farms              |
| d. 4 | h. I did not harvest last year. |
8. Which months do you harvest? (Select all that apply)
- |             |              |
|-------------|--------------|
| a. January  | g. July      |
| b. February | h. August    |
| c. March    | i. September |
| d. April    | j. October   |
| e. May      | k. November  |
| f. June     | l. December  |
9. What crops do you harvest? (Select all that apply)
- |   |                 |
|---|-----------------|
| a. Apples                                   | j. Peaches      |
| b. Apricots                                 | k. Pears        |
| c. Beans                                    | l. Peas         |
| d. Blueberries                              | m. Prune plums  |
| e. Brussel sprouts                          | n. Raspberries  |
| f. Cherries                                 | o. Strawberries |
| g. Grapes                                   | p. Daffodils    |
| h. Mushrooms                                |                 |
| i. Other (state as many as you like): _____ |                 |

#### MAIN SURVEY

10. How many days per week do you work during harvest?
- 1, 2 or 3 days
  - 4 days
  - 5 days
  - 6 days
  - 7 days
11. How many hours per day do you work on **average**?
- \_\_\_\_\_hours/day
12. What are the **maximum** hours you work per day?
- \_\_\_\_\_hours/day
13. What are the **minimum** hours you work per day?
- \_\_\_\_\_hours/day

14. How are you paid throughout the harvest season?
- Per hour
  - Piece rate
  - Combination, or switch between piece rate and hourly
  - Other: \_\_\_\_\_
15. How often are you paid?
- End of each day
  - Weekly
  - Every two weeks
  - Monthly
  - Other: \_\_\_\_\_

16. What is your rate of pay?

Crop/Farm	Rate	Unitary weight
Example 1: Cherries (Red Farm)	\$0.55/kg	
Example 2: Apples (ABC Farm)	\$18.90/bin (box)	1 bin = 200 kg (approx.)

17. How much crop do you pick **on average**? (Please state all the crops you generally harvest)

Crop name	Ex: Apples					
Per hour	1 box					
Per day	6 boxes					
Per week	24 boxes					
Unit weight	1 box = 200kg					

18. What is the **most** crop that you have ever picked? (Please state all the crops you generally harvest)

Crop name	Ex: Apples					
Per hour	2 boxes					
Per day	15 boxes					
Per week	48 boxes					

19. What is the **least** crop that you have ever picked? (Please state all the crops you generally harvest)

<b>Crop name</b>	Ex: Apples					
<b>Per hour</b>	Half box					
<b>Per day</b>	3 boxes					
<b>Per week</b>	12 boxes					

20. What impacts how much you pick?

- Weather
- Variety of crop
- Pruning practices
- Worker speed
- Tool conditions
- Other: \_\_\_\_\_

21. How often do you get training as to what the best method for harvesting is before working crops at a farm?

- Always
- Very Frequently
- Occasionally
- Rarely
- Never
- Other: \_\_\_\_\_

22. Please list the crops according to the level of difficulty to harvest:

Easy	Difficult	Most difficult
Example: <ul style="list-style-type: none"> <li>Grapes</li> <li>Cherries</li> </ul>		

23. Where do you live while harvesting?

- On orchard/farm
- Separate campsite
- Other: \_\_\_\_\_

24. How much do you have to pay to live?

- \$\_\_\_\_\_/day
- Prefer not to say

25. What is your greatest challenge working as a piece rate worker?

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26. What is the most difficult part of harvesting?
- a. Physical work
  - b. Inconsistent work hours
  - c. Too short harvest season
  - d. Other: \_\_\_\_\_
27. How many breaks a day do you normally take?
- a. \_\_\_\_\_ breaks
28. How long are your breaks on average?
- a. \_\_\_\_\_ min
29. Are you paid during your breaks?
- a. Yes
  - b. No
  - c. Depends on the farm
  - d. I don't know
30. Do you get paid overtime?
- a. Yes
  - b. No
  - c. Depends on the farm
  - d. I don't know
31. If you could choose, how would you prefer to get paid?
- a. Per hour
  - b. Piece rate
  - c. I'm indifferent
  - d. Other: \_\_\_\_\_
32. Why would you prefer to be paid per hour? (Select all that apply)
- a. Earn more money
  - b. Easier work
  - c. More supervision received
  - d. Other: \_\_\_\_\_
33. Why would you prefer to be paid piece rate? (Select all that apply)
- a. Earn more money
  - b. Work at my own pace
  - c. Less supervision needed
  - d. Other: \_\_\_\_\_

34. What impact would it have on you if the government abolished the piece rate system and paid you an hourly wage? (Select all that apply)
- a. Make less money
  - b. Make more money
  - c. Work more hours/days
  - d. Work more relaxed
  - e. Other: \_\_\_\_\_

35. What do you think about the government increasing the piece rates?

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36. What documentation do you need to provide to show how much you have harvested or how long you have worked?

Crop	Ex. Apples					
Answer	I fill boxes throughout the day and get paid by how many boxes I fill.					

37. Are there any problems with this documentation? If so, please explain.

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38. Have you ever been injured on the job? How and why?

- a. No
- b. Yes

Please explain how and why: \_\_\_\_\_

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39. Have you or your coworkers been previously contacted (in Canada) by other external party about your wages, work conditions, how you feel, etc?

- a. No
- b. Yes

Please state how often, how long ago and by who: \_\_\_\_\_

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40. What do you do in the off-season, when you are not harvesting fruit?
- a. Go to school / university
  - b. Have another job
  - c. Retired
  - d. Other
  - e. Collect EI
  - f. Go back to home country
  - g. Other: \_\_\_\_\_

#### DEMOGRAPHICS

41. Where are you from?
- a. Canada, Province or Territory: \_\_\_\_\_
  - b. New Zealand
  - c. Australia
  - d. Mexico
  - e. Jamaica
  - f. Other: \_\_\_\_\_
42. What is your native language?
- a. English
  - b. Spanish
  - c. French
  - d. Other: \_\_\_\_\_
43. What is your age?
- a. Under 17 years old
  - b. 18-24 years old
  - c. 25-34 years old
  - d. 35-44 years old
  - e. 45-54 years old
  - f. 55-64 years old
  - g. 65 years or older
44. What is your gender?
- a. Male
  - b. Female
45. Please specify your ethnicity:
- a. Caucasian
  - b. Hispanic or Latino
  - c. South Asian/East Indian
  - d. Black or African American
  - e. Native American
  - f. Asian / Pacific Islander
  - g. Other: \_\_\_\_\_

END OF SURVEY

Thank you for completing the survey. Please feel free to write any other comments, concerns or difficulties concerning your job in the survey. All the information provided will be kept anonymous and confidential.

Additional Comments:

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## APPENDIX C: Grower Questionnaire / Interview Guide

1. How many acres of each crop do you currently grow?
2. How many acres of each crop do you currently harvest?
3. When is your harvest time?
4. How much (weight) do you harvest of each crop per year?
  - a. 2016?
  - b. 2017?
  - c. Projected for 2018?
5. Is your crop organic? If yes, do you harvest differently because your crop is organic?
6. How many workers do you employ?
7. How many workers do you employ for harvest?
8. When do you start hiring workers for harvest?
9. How long do you employ the workers for harvest?
10. Where do the workers come from?
  - a. Domestic
    - i. Local
    - ii. Quebec
  - b. Migrant
    - i. Through the SAWP program
  - c. Traveling students or other
11. Where do you find your workers?
  - a. Advertise on website and job boards
  - b. Government programs
  - c. Other
12. Do you use a labour contractor?
13. Why do you use a labour contractor?
  - a. Easier
  - b. Cheaper
  - c. Faster
  - d. Can't get workers if I don't use a labour contractor
  - e. Some labour contractor, some hired by the farm
  - f. Other
14. Is it difficult for you to find harvest workers? Why?
15. What is the age range of your workers?
16. What percentage of your workers are return workers?
17. What training do the workers receive?
18. How many years on average have your harvest workers been employed by you?
19. How do you pay your harvest workers?
  - a. Hourly
  - b. Piece rate
  - c. Combination or switch between piece rate and hourly wage
20. What is the hourly minimum rate that you pay?
21. What is the hourly maximum rate that you pay?
22. What is the average hourly rate?
23. What is the minimum piece rate?
24. What is the maximum piece rate?
25. What is the average piece rate?
26. Do you pay a minimum amount to each worker? Per day? Per hour?
27. Do you pay a maximum amount to each worker? Per day? Per hour?
28. Do you pay a bonus?
29. How many hours per day do your harvest workers work?
30. What are the minimum hours that your harvest workers work per day?

31. What are the maximum hours that your harvest workers work per day?
32. Do you pay overtime?
33. How many breaks do your workers take per day? How long? Are the breaks monitored?
34. Do you provide housing on site?
35. What does the housing cost?
36. How much do your harvest workers pick per day? Per hour?
37. How do you track the harvest workers work?
  - a. Cards
  - b. At the end of each day
38. When do the workers get paid?
  - a. Weekly
  - b. Monthly
  - c. End of each day
39. How much do you spend each year on labour?
  - a. In 2016?
  - b. In 2017?
  - c. Projected for 2018?
40. What percentage of your labour costs is paid via piecework?
41. What percentage of your total costs of production is labour?
42. Are your labour rates increasing or decreasing? Why?
43. Do you think a combination of a minimum wage and minimum piece rate would/could work for you? Why or why not?
44. Do you see a role for regulation to be set for minimum piece rates? Why or why not?
45. Why do you pay harvest workers via piece rate?
  - a. More fair
  - b. They can earn more
  - c. Workers prefer it
  - d. Can't supervise staff if they are paid hourly
  - e. Other
46. Why do you pay harvest workers via hourly wage?
  - a. That's what the workers prefer
  - b. Other
47. What impact will it have on your business in January 2019 when the piece rate is going to increase by 11.5%?
48. In your opinion, what changes should be made to piece rates to help your business?
49. What is your greatest challenge related to labour and piece rates?
50. If labour continues to increase, how will you deal with this?
  - a. Increase price of product
  - b. Sell out
  - c. Just pay the higher rate, and accept a smaller profit margin
  - d. Hire fewer workers
  - e. Increase mechanization
  - f. Other
51. What production practices are you or will you change due to increasing labour costs?
  - a. Planting new crop varieties that require less labour
  - b. Other
52. What impact would it have on you if piece rates were no longer in place, and all workers had to be paid at least the minimum hourly wage?
53. What if minimum wage was used as a floor?

## APPENDIX D: Blueberry Enterprise Budget

Except:

 <b>Blueberry Budget from Year 6 to Year 10</b>						
	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>	<u>3 Year Avg, at Maturity</u>
<u>Yield (lbs)</u>						
Elliott Fresh Mkt	3000.00	3150.00	3300.00	3450.00	3600.00	3600.00
Duke Fresh Mkt	1400.00	1575.00	1925.00	2275.00	2625.00	2625.00
Duke Process Mkt	4200.00	4725.00	5775.00	6825.00	7875.00	7875.00
<b>Total yield</b>	<b>8600.00</b>	<b>9450.00</b>	<b>11000.00</b>	<b>12550.00</b>	<b>14100.00</b>	<b>14100.00</b>
<u>Sales (\$)</u>						
Elliott Fresh Mkt	4200.00	4410.00	4620.00	4830.00	5040.00	5040.00
Duke Fresh Mkt	1400.00	1575.00	1925.00	2275.00	2625.00	2625.00
Duke Process Mkt	1848.00	2079.00	2541.00	3003.00	3465.00	3465.00
<b>Total Sales</b>	<b>7448.00</b>	<b>8064.00</b>	<b>9086.00</b>	<b>10108.00</b>	<b>11130.00</b>	<b>11130.00</b>
<u>Expenses (\$)</u>						
Apply pH Amendment	0.00	0.00	0.00	0.00	0.00	
Soil Sample	0.00	0.00	0.00	0.00	0.00	
Soil Prep	0.00	0.00	0.00	0.00	0.00	
Plant	0.00	0.00	0.00	0.00	0.00	
Top Mulch	0.00	650.00	0.00	0.00	650.00	216.67
Apply Top Mulch	0.00	300.00	0.00	0.00	300.00	100.00
Seed Grass	0.00	0.00	0.00	0.00	0.00	
Bee Hive rental	200.00	300.00	300.00	300.00	300.00	300.00
Crop Consultant	100.00	100.00	100.00	100.00	100.00	100.00
Prune Elliott	216.00	252.00	288.00	324.00	360.00	360.00
Prune Duke	420.00	490.00	560.00	630.00	700.00	700.00
Bird Control	225.00	225.00	225.00	225.00	225.00	225.00
Hand Pick Elliott	1800.00	1890.00	1980.00	2070.00	2160.00	2160.00
Hand Pick Duke	980.00	1102.50	1347.50	1592.50	1837.50	1837.50
Picking Pails	15.00	15.00	15.00	15.00	15.00	15.00
Sanitary Facilities	50.00	50.00	50.00	50.00	50.00	50.00
Food Safety Certification	125.00	125.00	125.00	125.00	125.00	125.00
Production Insurance	115.00	115.00	115.00	115.00	115.00	115.00
Labour	975.20	990.65	1021.53	1052.41	1083.29	1083.29
Fert & Amendments	144.20	167.95	196.65	231.40	231.40	231.40
Herbicides & Pesticides	743.03	743.03	743.03	743.03	743.03	743.03
Equip Oper, Repairs & Rent	246.19	259.38	275.82	312.16	350.07	350.07
Equip Ownership	847.78	874.42	790.54	981.00	1088.95	1088.95
<b>Total Direct Expenses</b>	<b>7202.41</b>	<b>8649.94</b>	<b>8133.07</b>	<b>8866.49</b>	<b>10434.24</b>	<b>9800.91</b>
<b>Operating Margin</b>	<b>245.59</b>	<b>-585.94</b>	<b>952.93</b>	<b>1241.51</b>	<b>695.76</b>	<b>1329.09</b>
<u>Ownership/Investment (\$)</u>						
Equip **	710.61	737.26	790.54	843.83	951.79	951.79
Drainage	70.50	70.50	70.50	70.50	70.50	70.50
Irrigation	157.85	157.85	157.85	157.85	157.85	157.85
Trellising	76.62	76.62	76.62	76.62	76.62	76.62
<b>Total Investment/ Overhead</b>	<b>1015.58</b>	<b>1042.22</b>	<b>1095.51</b>	<b>1148.80</b>	<b>1256.75</b>	<b>1256.75</b>
<b>Accumulated Operating Margin</b>	<b>-8583.04</b>	<b>-9168.97</b>	<b>-8216.05</b>	<b>-6974.54</b>	<b>-6278.78</b>	

**BUILDING BUSINESS SUCCESS**

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Source: B.C. Ministry of Agriculture. 2016

Assumptions include:

- Hand harvest cost: \$0.60/lb for Duke  
\$0.70/lb for Elliot.
- Fresh Market Price: \$1.00/lb for Duke  
\$1.40 for Elliot
- Processed Market Price: \$0.55/lb.

Conclusions:

- Hand picking cost represents 60% and 50% of the revenue based on fresh market prices, depending on the variety.
- If a grower hand picked the berries and was not able to sell it on the fresh market and had to accept processed fruit price, they would lose money as the picking costs alone would exceed revenues. Therefore, if fruit is being hand picked, in order for the costs to be paid, the berries must be sold into the fresh market.

### **Farm Level Example:**

Returns were estimated for a 40-acre field based on 12 acres of Elliot and 28 acres of Duke. This projection was based on 100% of the Elliot sold into the fresh market and being hand picked, with 25% of the Duke sold as fresh and hand-picked, the balance being machine harvested and sold as processed fruit. It was calculated that after 3 years of mature production, sales would be \$11,130 per acre, direct expenses would be \$9,800.01 per acre; therefore, costs representing 88% of revenues. Operating Margin was calculated to be \$1,329.09/acre. If picking costs increase 11.5% for hand picking, direct expenses would increase to \$10,260.62. Operating margin would reduce to \$869.38, which is a decrease of 34.6%.

Conclusion: Increased hand picking costs will have a significant effect on grower returns at the farm level for the blueberry industry.